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OBJECTIVE PSYCHOTHERAPY OF THE NEUROSES

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In the treatment of illness we aim to achieve the greatest effects in the shortest time. There is probably no therapy that falls farther short of this aim than to-day's most fashionable form of psychotherapy—psychoanalysis. The psychoanalysts believe that fundamental psychotherapy of the neuroses depends upon the uncovering and expression of 'repressed ideas'—a long and often interminable process. That psychoanalytic theory is non-scientific in character was shown 3 decades ago by Wohlgemuth,[20] and recently a devastating critique has been presented by Salter.[16] With a scientifically untenable theory as a basis, it is not surprising that psychoanalytic therapy has not excelled itself. The purpose of this paper is to show that psychotherapy based on objectively verified psychological principles is not only more effective clinically but takes less time.

The widespread belief that psychoanalytic therapy is 'the real thing' was shattered when it was shown that the usually prolonged and expensive psychoanalyses gave no better results than a variety of 'traditional' psychotherapeutic methods.[12, 17] Wilder,[17] author of an elaborate statistical study, found that the psychotherapeutic results achieved by hospitals, mental hygiene clinics, psychoanalytic institutes, private psychoanalysts, and private psychotherapists were much the same, irrespective of the methods used. The obvious inference was that the improved cases owed their progress to factors common to all the different interview techniques.

Certain experimental investigations [3, 21, 24] have indicated that the main common factor is *reciprocal inhibition of neurotic anxiety responses.* This means that interview situations of diverse kinds all induce in a certain number of patients emotional responses that are antagonistic to neurotic anxiety and tend to weaken it. In other words, while the patient talks about things that ordinarily evoke anxiety in him, he simultaneously has other emotions aroused by the therapist. These emotions reciprocally inhibit the neurotic anxiety and thereby undermine its tendency to occur. The mechanisms involved in this process of reciprocal inhibition have been fully discussed elsewhere,[21, 23, 24] and a brief account has been published in this *Journal*.[22] Here it need only be noted that the mechanisms conform to principles of behaviour development that are partly rooted in Pavlov's work and that have been established by rigorous scientific studies largely associated with Professor C. L. Hull of Yale University.[9]

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Interviews also produce clinical improvement by other means than reciprocal inhibition, but the methods concerned have their effect merely through changing the aspect of anxiety-evoking stimuli so that they no longer seem fearful. This may be accomplished by information, by semantic analyses or even by the patient's unwittingly imitating the therapist's unruffled and confident approach. But though the patient may feel better, the underlying neurotic sensitivity is usually unaltered. For example, a patient with a dread of disease may feel freed from the anxieties arising from a current minor illness after the harmless implications of his symptoms have been made thoroughly clear to him. But a few weeks later a different minor illness disturbs him no less than the previous one did. Only if there is a *diminished* anxiety reaction to the second illness can it be said that the neurotic tendency has been influenced in any fundamental way.

SPECIAL THERAPEUTIC METHODS

Once it seemed clear that reciprocal inhibition was the central principle underlying interview therapy, the obvious course was to try to find special methods of obtaining reciprocal inhibition of neurotic anxieties, to apply to those cases in which reciprocal inhibition failed to result spontaneously from the interview situation. It was soon realized that certain methods long in use—abreactive techniques—sometimes achieved reciprocal inhibition of anxieties even though the therapists were aiming at something quite different. However, a search was also made for new methods. Several were found that have far wider application and greater reliability than any of the abreactive techniques.

The methods now available are briefly described below. They are grouped according to whether they make use of the patient's day-to-day activities (life situation) or whether they consist purely of consulting-room techniques. For most patients more than one procedure is used. It must be emphasized that the therapist has to be thoroughly acquainted with the personality of the patient and with the factors that determine his neurotic responses.

1. USING LIFE SITUATIONS

In those cases of neurosis which may be expected to benefit therefrom—and that is the great majority—I set out deliberately to cause the patient to change his behaviour in relevant situations so that reciprocal inhibition of anxiety responses is procured. The new behaviour required is most often aggressive or assertive in character, because

the autonomic components of such behaviour are opposite to the autonomic responses subserving anxiety,[1] and may therefore be expected to be antagonistic to them. It is important to note that in being instructed to perform this behaviour *the patient is in no sense being asked to put on an act*. The person towards whom the patient is expected to change his behaviour is one who ordinarily evokes anxiety in him. When anxiety is evoked it is almost invariably accompanied by some measure of resentment, and it is this habitually suppressed resentment that the patient is now required to express. By expressing it in the face of the anxiety he reciprocally inhibits the anxiety. (For examples see Case Histories 3 and 4.)

Behaviour prescriptions often very similar to the above have been employed with much success by Salter,[15] but on the Pavlov-based theory that neurotic habits are 'inhibitory' and can be overcome by practising 'excitatory' behaviour. Though neurotic patients do suffer from widespread 'inhibitions', they are only a secondary effect of anxiety. Another writer who has successfully used life situations therapeutically is Herzberg,[8] who prescribes specific acts in opposition to individual neurotic tendencies.

It should be stressed that behaviour prescriptions of the kind described above must not be issued indiscriminately. Aggression expressed in a way that is inappropriate to the circumstances may easily have punishing consequences potent enough to neutralize the effects of the reciprocal inhibition of anxiety; and the anxious tendency may then be consolidated. For this reason it is quite often necessary for the patient to be guided towards achieving factual dominance in his encounters with those who disturb him by employing subtle manoeuvres in which aggression is not *outwardly* expressed.

The above methods are obviously not applicable to anxieties aroused by *non-personal* stimuli, e.g. inanimate objects, words. In such circumstances I have usually found that reciprocal inhibition of the anxiety can be obtained if the patient can induce a strong relaxation response. When it is indicated, patients are given a thorough training in Jacobson's method of relaxation.[10] After some previous practice a high degree of relaxation can be obtained in a matter of seconds, and many patients quickly learn to employ this to counter their anxieties (Case 4). That the autonomic effects of powerful relaxation are antagonistic to those of anxiety seems clear from many of Jacobson's observations; and I have repeatedly found that the pulse rate drops sharply (e.g. from 120 to 80 per minute) in a disturbed patient who can relax rapidly. A well-practised subject can often learn to obtain powerful autonomic effects with the relaxation of only localized zones of his musculature (Jacobson's 'differential relaxation'). It may be remarked that relaxation used in this way is a different proposition from the common, rather sterile practice of having tutorial and practice sessions in relaxation without any attempt to apply the training to life situations.

2. Special Consulting-Room Procedures

Several procedures are used in the consulting room to bring about reciprocal inhibition of neurotic responses.

(a) *Hypnotic Desensitization.* In the treatment of so-called 'simple' phobias, which are ordinarily among the most difficult of psychotherapeutic problems, there is a usually very effective hypnotic technique. A deep state of calm and relaxation is hypnotically induced. (This sometimes requires preliminary training and practice in relaxation.) The hypnotized patient is then made to visualize a small 'dose' of the phobic stimulus. If the relaxation is unimpaired by this a slightly greater 'dose' is presented. The 'dosage' is gradually increased from session to session, until at last the phobic stimulus can be presented at maximum intensity without impairing the calm, relaxed state. When this happens, the phobia can usually be regarded as entirely eliminated (Case 2). This procedure makes great demands upon the judgment of the therapist. Premature presentation of excessive amounts of the phobic stimulus may cause serious resensitization.

(b) '*Psychodrama.*' In dealing with certain limited aspects of some cases a kind of 'psychodrama' is sometimes useful for obtaining reciprocal inhibition of anxiety. Unlike Moreno's original psychodrama,[13] it does not consist of making the patient act out his *existing* attitudes in various personal relationships. Instead, with the therapist taking the role of some person to whom the patient ordinarily reacts with excessive anxiety, the patient is directed to behave in a new, usually aggressive manner, in the expectation that thereby the anxiety that tends to be evoked will be reciprocally inhibited. If the patient deals successfully with this relatively mild 'play' situation, it is a stepping-stone towards dealing with the real person.

(c) *Abreactive Techniques.* Reciprocal inhibition of anxiety may also be obtained by producing 'abreaction' by a variety of techniques. Intravenous pentothal is sometimes effective, but more often it is not. (Sometimes, though, pentothal repeated at intervals of a few days produces in an unexplained way a gradual but lasting diminution in the general level of 'free-floating' anxiety. Cline [2] has recently reported similar effects with intravenous amytal.) Intravenous methedrine greatly facilitates associations and increases emotional reactivity, but its effects tend to be uncontrollable and it is quite possible to do harm instead of good, for if the anxiety overwhelmingly dominates the antagonistic emotional response tendencies, it is the latter that suffer reciprocal inhibition. In general, I have found the relaxation technique for obtaining abreaction described by Pascal [14] easily the most satisfactory.

A Note on the Mechanism of Abreaction and the Supposed Role of Forgotten Memories

An abreaction is an emotional re-evocation of a fearful past experience. Beneficial effects seem to be generally positively correlated with the strength of the emotional reaction. However, as Grinker and Spiegel [4] have pointed out, if unrelieved terror is the only emotional component of the abreaction the patient makes no progress. It is only when the patient can feel the impact of the therapeutic situation, e.g. the therapist's sympathetic acceptance of him, that beneficial abreaction can occur. This is emphasized by Grinker and Spiegel's observation [6] that 'abreactions that occur spontaneously under alcohol are non-therapeutic'. In the case of abreaction, too, benefit depends on the evocation of *other* emotional responses in association with the fearful situation, so that, presumably, reciprocal inhibition of anxiety occurs. Thus the effects of abreaction appear to parallel the non-specific effects of interview situations already noted, except that a higher level of emotional responsiveness has been induced. The specially dramatic changes sometimes produced by abreaction are in line with the well-known experimental finding that modifications of response are likely to be more marked when the initial level of emotion is higher.

If the above interpretation is correct it would follow that the uprooting of the much-advertised trouble-causing 'repressed memories' is not essential to the therapeutic effects of abreaction, although the ventilation of forgotten material often provides the subject matter of an abreaction. Many of Grinker and Spiegel's patients [5] were improved by abreactions in which the battle experiences concerned were well-remembered ones. In the case that follows I was able to demonstrate how irrelevant to a patient's recovery the restoration of forgotten memories can be.

Case 1. A 37-year-old miner was seen in a state of intense anxiety. He had a very marked tremor and a total amnesia for the previous 4 days. He gave a story that his wife, on whom he was greatly dependent, had cunningly got him to agree to 'temporary divorce' 6 months before, and was now going to marry a friend of his. No attempt was made at this

juncture to recall the lost memories. The patient was made to realize how ineffectual his previous attitudes had been and how he had been deceived. As a result he angrily 'had it out' with his wife and a few others, anxiety rapidly decreased, and he soon felt strongly motivated to organize his whole life differently. At his 5th interview (10 days after treatment began), he said that he felt 'a hundred per cent' and looked it, and was full of plans for the future. *Yet, he had still recalled nothing whatever of the forgotten 4 days.*

Since the possible effects of restoring the memories at this stage were obviously a matter of great interest, the patient was now deeply hypnotized and told to recount the story of the 4 days. He narrated in detail how he had travelled 300 miles to his rival meaning to strangle him, how he had been fobbed off, how, returning, and at last hearing from his wife's own lips that she was in love with the rival, he had staggered out of the house, made his way to his sister's house and there collapsed. He told all this quietly, with little emotion, except where he described meeting his rival. Then he moved his hands as if about to throttle someone. He was given the post-hypnotic suggestion that he would remember the whole story on waking. When he woke he told it again briefly, expressing slight amusement at it, and surprise at having remembered. No important consequences ensued. A few months later he married another woman and was apparently very well adjusted generally.

RESULTS OF OBJECTIVE PSYCHOTHERAPY

The criterion for selection of cases in the present series is for the patient to have had an *adequate* amount of reciprocal-inhibition-based psychotherapy. This means that there must have been a reasonable opportunity to apply all the available techniques. It quite soon becomes evident whether the patient is responding or not. If he responds, therapy is continued for as long as necessary; if not, it is abandoned and the case is regarded as a failure.

Effectiveness of treatment is estimated by the 5 criteria suggested by Knight[11] in his report on psychoanalytic therapy—symptomatic improvement, increased productiveness, improved adjustment and pleasure in sex, improved interpersonal relationships and ability to handle ordinary psychological conflicts and reasonable reality stresses. In addition, changes in the Thurstone-Willoughby score,[18, 19] which measures basic neuroticism, are noted. On the basis of these criteria results are grouped under the headings used by Knight:

1. Apparently cured;
2. Much improved;
3. Moderately to slightly improved, and
4. Unimproved.

Even with great symptomatic improvement no case has been regarded as much improved unless there has been commensurate decrease in basic neuroticism, as measured by the Thurstone-Willoughby test.

In Table I the 70 cases are grouped, as is customary, according to the 'type' of neurosis. Such a grouping has very little intrinsic importance, for all neuroses are essentially anxiety neuroses, and most have a mixed symptomatology. It will be noticed, however, that there is a fairly typical distribution of the 'types'.

TABLE I: CLASSIFICATION OF CASES

Category	*Number*
Anxiety states	39
Hysteria	6
Reactive depression	7
Obsessions and Compulsions	5
Neurasthenia	3
Mixed	10
Total	70

In Table II the results of objective psychotherapy are shown. The cases are subdivided into a small group which had previously had various periods of psychoanalysis (range 6 months to 4 years) with little or no effect and a much larger group which had not. While considerable success was obtained with the psychoanalysed group, they were generally more difficult to treat, as reflected in the fact that the mean number of interviews needed was more than doubled (49 against 21.3). The chief reason for this is that notions of the psychoanalytic type interfere considerably with the patient's ability to co-operate in the required procedures and sometimes much time has to be spent in effecting a reorientation. In the whole series of 70 cases, 34 (49%) were apparently cured, 26 (37%) much improved, 7 (10%) slightly to moderately improved, and 3 (4%) unimproved. The mean number of interviews required was 24.9, with a range of 4–125. Two-thirds of the cases fell within the range of 9–36 interviews.

TABLE II: RESULTS OF PRESENT THERAPY

	No. of Cases	*Apparently Cured*	*Much Improved*	*Slightly to Moderately Improved*	*Not Improved*	*No. of Interviews*	
						Mean	*Range*
Not previously psychoanalysed	61	32	21	6	2	21·3	4–125
Previously psychoanalysed	9	2	5	1	1	49·0	9–92
Total	70	34 (49%)	26 (37%)	7 (10%)	3 (4%)	24·9	4–125

Table III compares, in percentages, the present results with those of Hamilton and Wall's New York Hospital series[7] and those of the largest reported psychoanalytically treated series.[11] In the case of the latter, 2 figures are given for both the total number of cases and the percentages. The larger figure includes those patients who had less than 6 months' psychoanalysis. It is reasonable to suppose that not less than half of the cases which stopped before 6 months (i.e. probably about 100 interviews) were patients who were not noticing any benefit from their analyses. Thus the true proportion of cases favourably influenced by psychoanalysis would probably be no more than 50%.

TABLE III: COMPARATIVE RESULTS

Series	*No. of Cases*	*Apparently Cured or Much Improved*	*Improvement Moderate, Slight or Nil*
Berlin Psychoanalytic Institute (11)	263—402 (see text)	62%—40·5% (see text)	38%—59·5% (see text)
New York Hospital (7)	100	53%	47%
Present Series	70	86%	14%

The χ^2 test for significance yields a value of 30 in

comparing the present results with those of the psychoanalytic series and 18 in comparing them with those of the New York Hospital series. Thus both comparisons indicate that the probability that the higher proportion of successes in the present series is due to chance, is negligible.

The crucial point of the comparative figures in Table III is that 86% of the cases in the present series were either apparently cured or much improved, and only about 50% of the cases in the other 2 series. If the favourable results of the present series are, to the extent of 50%, regarded as due to the non-specific reciprocal inhibition that would occur in any kind of interview situation, the additional 36% of good results appear to be attributable to the special measures for obtaining reciprocal inhibition described above. Furthermore, the small average number of interviews needed suggests that the use of these special measures early in treatment greatly accelerates the improvement of those cases which would have responded to the non-specific factors alone.

CASES ILLUSTRATING OBJECTIVE PSYCHOTHERAPY

The following cases illustrate the use and the effects of some of the abovementioned techniques of objective psychotherapy.

Case 2: Anxiety-State Superimposed on Long-Standing Phobia. A 23-year-old divorced tram driver entered the consulting room in a state of acute anxiety. Eight hours before a woman had walked into his slowly moving tram. She had been 'knocked out and her head was bleeding'. Although a doctor had told him that the woman's injury was not serious, he had become increasingly shaky and had developed severe epigastric pain. He had got over previous accidents in an hour or two, *but no human injury had been involved.*

The significance of the italics is that when the patient was 13 his father had died following an accident and since then he had had a fear of human blood. Even the tiny bead of blood that might appear on his face during shaving gave him an uncomfortable feeling. He was quite indifferent to animal blood—had seen oxen killed, and had himself cut the throats of fowls. It was clear that *his grossly excessive reaction to the present accident was due to his human blood phobia*; and to overcome this phobia was the central aim of therapy.

The first 5 interviews, which occurred over 6 days, were confined to obtaining an understanding of the patient's personality and background, and to overcoming his immediate disturbed state by intense, hypnotically induced relaxation. At the 5th interview, he reported feeling quite well. He was told to drive a tram again for a short distance, which he did later that day without any ill effect.

At the 6th interview, with the help of the galvanic skin reaction (psychogalvanic response) to verbal stimuli, various situations involving human blood were arranged in ascending order of their disturbing effect. From this time onwards, at each interview, while the patient was in a state of hypnotic relaxation, he was made to visualize 'blood situations'. The feeblest was a slightly blood-tinged bandage lying in a basket. When this failed to disturb his relaxation, he was presented with a tiny drop of blood on his own face while shaving. In this way, with the presentation of 2 or 3 images per session, it was possible gradually to work up to a stage at which the patient could visualize a casualty ward full of carnage and not be disturbed by it.

What significance does this have for real life situations? The significance in this case was revealed in a most dramatic way. Two days before his last interview, the patient saw a man being knocked over by a motor cycle. The victim was seriously injured and bleeding profusely. The patient was absolutely unaffected by the blood, and when the ambulance arrived, helped to load the victim on to it!

This patient had 15 interviews spread over a month. Difficult personal problems, largely sexual, were also dealt with, and at the end of treatment the patient reported good control over all aspects of life, and greater confidence and calm than he had ever before experienced. His previously high neurotic Willoughby score was found to have dropped to an exceptionally low figure.

Case 3: Acute Hysterical Attack Followed by Anxiety State in Neurotic Personality with Chronic Asthma. A married woman of 29 was first seen in a state of marked anxiety and depression, and complaining of particularly terrifying nightmares. A fortnight before, hearing that her younger sister had died in *status asthmaticus*, the patient had collapsed and remembered nothing clearly of the next 3 days. Relatives had told her that she had been confused and stuporose, had seemed unable to move her legs, and had called out her dead sister's name repeatedly.

The patient had always been 'nervous' and hypersensitive and suffered from a persistent sense of helplessness with people, and these things had all become much worse since the death of her brother from coronary thrombosis 3 years before. Since that time she had also become aware of a special phobia about death. She had been troubled with asthma during the previous 8 years, following an attack of bronchitis and pleurisy a few months after her marriage. Her chest felt tight almost continuously, and she also had severe acute asthmatic attacks at irregular intervals. The tightness had been largely under control for about a year through the routine use of Amesec, but she was nevertheless dyspnoeic walking uphill.

Therapy consisted of (1) teaching her how to act assertively in increasingly difficult social situations and (2) hypnotic desensitization of her death-fear. As she was extremely tense, preliminary training in relaxation had to be carried out.

Improvement was rapid. After 3 interviews she felt much better and ceased to have nightmares. At the fourth she expressed surprise at her calmness earlier that day when her husband had a tonsillectomy. At the sixth interview she reported having wept for the first time at the loss of her sister. Her ability to handle situations she had previously found overwhelming improved with practice from day to day, enabling her to overcome her lifelong emotional hypersensitivity. At the ninth and final interview her Willoughby test score showed that in terms of basic neuroticism she was well within normal limits. Therapy had taken exactly 4 weeks.

Meanwhile she had totally stopped taking Amesec, and for the first time in 8 years was able to walk uphill without dyspnoea. During the 10 days that elapsed between the 7th and 8th interviews she had an attack of influenza which, during the previous 8 years, would inevitably have been followed by an acute asthmatic attack. This time there was no suggestion of an attack.

Six months later she reported that she was very happy and 'I've never been so well in my life'.

Case 4: Chronic Anxiety State with Prominent Obsessive Compulsive Features. A married woman of 28 was first seen 5 years after the onset of a fluctuating chronic anxiety state with intermittent brief attacks of acute terror. She was frequently obsessed by ideas of suicide or homicide that terrified her. When close relatives went on car journeys (which they frequently did) she was afraid that they would be killed, and usually went through certain compulsive rituals, feeling that through them the feared catastrophe might be averted.

She had had a fear-ridden childhood in which family closeness was the highest virtue, and any show of lack of love towards parents or siblings would elicit from her parents threats of visitations from vague, supernatural terrors. As a result of this kind of training, she became fearful at every manifestation of unhappiness in members of her family, and was quite incapable of expressing any kind of aggression towards them or, secondarily, towards anybody else.

When first seen, this patient had already had about 3½ years of psychoanalysis (i.e. something like 500 sessions) from 2 different analysts, with very little improvement. While with the first analyst she had had a spell of claustrophobia lasting 3 weeks, and with the second a spell lasting several months. When I first saw her she still fondly believed that she would be cured if only 'it' would emerge from her 'unconscious mind', and had only very reluctantly come to see me at the suggestion of her doctor, for she was about to arrange interviews with a third analyst.

At the outset I explained to her that all neurotic reactions

are at bottom nothing but persistent unadaptive anxiety reactions, and that like other undesirable habits they can be overcome *gradually* by the performance of new behaviour in the situations that produce anxiety. As she protested that her acute attacks of anxiety seemed to come out of a clear sky it became important to discover what their antecedents were. (The apparent causelessness of these attacks had always accentuated their effect on her by playing on her old dread of supernatural forces. Being told by the analysts that they were really *unconscious* forces had not helped matters.) Careful investigation of the circumstances of her attacks revealed that they were invariably associated either with an ineffectual encounter with some person or with some stimulus connected with the terrors of the past. Once the antecedents were identified the anxieties could be attacked on the reciprocal inhibition principle. In personal situations that had been disturbing to her, her behaviour was gradually changed in the direction of more masterful patterns. For example, when her 2 sisters left her out of a discussion regarding certain family property, she reproached them angrily instead of passively permitting the development of the hurt and helpless feeling that could be the precursor of an anxiety attack. The rationale of this was the expectation that the expressed anger would reciprocally inhibit the anxiety-response tendency, weakening it to some extent for next time. After many 'threatening' situations had been handled successfully this expectation was found to have been realized, for the whole anxious tendency arising from personal encounters was greatly lessened.

The anxieties arising from stimuli associated with past terrors were dealt with by the relaxation technique described above. The patient was first given intensive training in relaxation. When she was well-practised in this, she was instructed to 'switch on' the relaxation whenever the old familiar panic threatened.

By means of the above methods, aided to some extent by some abreaction that occurred spontaneously now and then during interviews, the patient made gradual improvement. She broke off treatment to have a baby after 73 interviews spread over 13 months. She was feeling generally at ease, having only occasional mild anxiety attacks, and handling all aspects of life with considerable competence. Her Willoughby score, previously highly neurotic, now reflected only mild neuroticism. She was undoubtedly much improved, and 5 months later reported that she was continuing to improve through applying the principles she had learned.

SUMMARY

Several methods are described of treating neurotic patients on the principle that neurotic responses can be weakened gradually by reciprocally inhibiting them repeatedly. Markedly beneficial effects of a fundamental kind are usually obtained relatively rapidly. In the present series, 86% of cases were greatly benefited.

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REFERENCES

1. Arnold, M. B. (1945): Psychol. Rev., **52,** 35.
2. Cline, W. B. (1952): Dis. Nerv. Syst., **13,** 48.
3. Farber, I. E. (1948): J. Exp. Psychol., **38,** 111.
4. Grinker, R. R. and Spiegel, J. P. (1945): *War Neuroses*, p. 81. Philadelphia: Blakiston.
5. *Ibid.*, pp. 83–84.
6. Grinker, R. R. and Spiegel, J. P. (1945): *Men under Stress*, p. 392. London: Churchill.
7. Hamilton, D. M. and Wall, J. H. (1942): Amer. J. Psychiat., **98,** 551.
8. Herzberg, A. (1945): *Active Psychotherapy*. London: Research Books.
9. Hull, C. L. (1943): *Principles of Behavior*. New York: Appleton-Century.
10. Jacobson, E. (1938): *Progressive Relaxation*. Chicago: University of Chicago Press.
11. Knight, R. P. (1941): Amer. J. Psychiat., **98,** 434.
12. Landis, C. (1937): *A Statistical Evaluation of Psychotherapeutic Methods*. In Hinsie, L. E., *Concepts and Problems of Psychotherapy*. New York: Columbia University Press.
13. Moreno, J. L. (1946): *Psychodrama*. New York: Beacon House.
14. Pascal, G. R. (1947): J. Abnorm. Soc. Psychol., **42,** 226.
15. Salter, A. (1950): *Conditioned Reflex Therapy*. New York: Creative Age Press.
16. Salter, A. (1952): *The Case against Psychoanalysis*. New York: Holt.
17. Wilder, J. (1945): J. Clin. Psychopath. Psychother., **7,** 311.
18. Willoughby, R. R. (1932): J. Soc. Psychol., **3,** 401.
19. Willoughby, R. R. (1934): J. Soc. Psychol., **5,** 91.
20. Wohlgemuth, A. (1923): *A Critical Examination of Psycho-Analysis*. London: Allen.
21. Wolpe, J. (1948): *An Approach to the Problem of Neurosis Based on the Conditioned Response*. M.D. Thesis. University of the Witwatersrand.
22. Wolpe, J. (1950): S. Afr. Med. J., **24,** 613.
23. Wolpe, J. (1952): Psychol. Rev., July (in the press).
24. Wolpe, J. (1952): Brit. J. Psychol., General Section, November (in the press).

ABSTRACTS

L. Paufique and R. Etienne. *Treatment of Angiomas of Orbit and Eyelids with Sclerosing Injections of Quinine-Urea.* Bull. Sociétés d' Ophthalmol. de France, November 1949, **8,** pp. 860–865.

Sclerosing injections were introduced in ophthalmology by Weekers (1933) who used quinine-urea in angiomas of the eyelids. At present angiomas of the orbit and conjunctiva are treated also in this way.

Treatment is started with a 5% solution of quinine and urea hydrochloride; when it is considered necessary to use a stronger solution, 7% may be injected, so as to diminish the number of injections. These are made directly into the angiomatous mass and around it, if possible. One ml. suffices for the first injection, 2 or 3 ml. for the next one. The patient should be warned not to worry about an eventual local hyperaemic reaction, which will disappear rapidly by application of hot or cold compresses.

Sclerosis progresses slowly and injections should be repeated only after at least a fortnight.

In small and superficial angiomas the application of carbon dioxide snow may suffice, but in larger ones, situated under a normal skin, the described injections of quinine-urea give excellent results.

N. A. McCormick. *The Diagnosis of Early Cancer of the Large Bowel and Rectum.* Canadian Med. Assoc. J., May 1951, **64.**

More cancers are located in the caecum, colon, and rectum than in any other system of the body. Cancer of the large bowel is the most common variety of cancer and accounts for 15% of all deaths by cancer.

The hospital mortality of rectal cancers has dropped to 3%, and 52% of all patients have lived for five or more years after resection.

Similar results now prevail in patients suffering from cancer of the colon. A small, but definite number of patients with rectal cancer are amenable to cure by irradiation.

Patients with cancer of colon or rectum usually exhibit one or more of the following 3 symptoms, viz. bleeding, alteration in bowel function, and abdominal discomfort. Obstruction of the large bowel usually means cancer.

Seventy per cent of the cancers occurring in the colon or rectum are either palpable to the examining finger, or are within reach of the sigmoidoscope.

There is every reason to believe that the death rate from this disease might be appreciably lowered with, as a result, noticeable improvement in the entire cancer picture.

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VAN DIE REDAKSIE

LABORATORIUMTOETSE BY HEMORRAGIESE SIEKTE

Wanneer hul met 'n bloedingsiekte te kampe het, neem baie instinkmatig hul toevlug na die laboratorium vir hulp en sonder om te aarsel vra hulle vir 'n mag der menigte toetse met die hoop dat daaruit 'n diagnose te voorskyn sal tree. Baie van die toetse mag onnodig en selfs misleidend wees, tensy dit onder ten volle gestandaardiseerde toestande gedoen word. Dis van die allergrootste belang om te weet wat die grens van normaal is, nie net vir dieselfde metode nie maar ook vir die besondere laboratorium. Geringe afwyking van die tegniek mag lei tot groot verskille in die resultate wat verkry word. Dis slegs teen hierdie agtergrond wat die waarde van toetse van 'n hemorragiese toestand bepaal kan word.

Oor die algemeen kan dit gesê word dat hoe eenvoudiger die toets is, hoe betroubaarder is die resultaat. Van die toetse wat uitgevoer word, is die stollingstyd een van die mees belangrike. Die beste toets vir stollingstyd is dié waarvoor aarbloed in glasbuise gebruik word. Die gebruik van silikoon word slegs by wyse van verdoeming genoem, want die normale grens is te groot om die verkryging van akkurate resultate met abnormale bloed moontlik te maak. Die grootte van die buise, die hoeveelheid bloed wat gebruik word, die hittegraad waarop die bloed toegelaat word om dik te word en die mate van oorhelling van die buise moet almal streng gestandaardiseer word. Die aarprik moet tegnies foutloos wees, die spuit moet droog wees en borrels moet vermy word. Die gebruik van haarvatbloed om stollingstyd te bepaal is oor die algemeen meer gewaag, netsoos die gebruik van herverkalkte sitraat of versteende plasma.

'n Verlengde stolling van die bloed in die afwesigheid van 'n anti-stollingsterapie is feitlik kenmerkend van hemofilie, aangesien die ander toestande wat dit veroorsaak selde teëgekom word. In purperstadiums is dit die plaatjies wat belangrik is. As plaatjies by 'n goed gevlekte smeer van randstandige bloed, skaars of afwesig is, is dit van min belang om meer ingewikkelde toetse uit te voer. 'n Plaatjie-telling kon geneem word, maar die fouteringsgebied is wyd. 'n Verstandige persoon sal nie meer gevolgtrekkings maak as dat die getal plaatjies normaal, 'n bietjie verminder of baie verminder is nie. Klein veranderings in plaatjie-tellings is van geen belang nie.

Die bloedingtyd en klont-terugtrekking stem gewoonlik ooreen met die plaatjie-telling, so ook die protrombienverbruiktoets en, in aanwesigheid van trombosietopenie, dra dit min tot die diagnose by en is gewoonlik onnodig. Die bloedingtyd is soms, in die afwesigheid van trombosietopenie, verleng (sogenaamde atrombosietopeniese huidbloeding), maar oor die algemeen is dit 'n onnoukeurige metode om plaatjies te tel. Die Hess-toets is gewoonlik positief by trombosietopenie maar mag positief wees as die

EDITORIAL

LABORATORY TESTS IN HAEMORRHAGIC DISEASE

When confronted with a bleeding disease many turn instinctively to the laboratory for assistance and without hesitation ask for a battery of tests from which it is hoped a diagnosis will emerge. Many of the tests may be quite unnecessary and may even be misleading, unless done under fully standardized conditions. It is of vital importance to know the range of normal not only for the same method but also for the particular laboratory. Slight variation in the technique may lead to gross differences in the results obtained. It is only against this background that tests for a haemorrhagic state can be evaluated.

In general it may be said that the simpler the test, the more reliable the result. Of the tests performed, the coagulation time is one of the most important. The best test of coagulation time is that which uses venous blood in glass tubes. The use of silicone is mentioned only to be condemned, since the normal range is too great to permit accurate results to be obtained in abnormal bloods. The size of the tubes, the volume of blood used, the temperature at which the blood is allowed to clot and the amount of tilting of the tubes must all be rigidly standardized. The venipuncture must be technically flawless, the syringe must be dry and bubbles must be avoided. The use of capillary blood for the estimation of coagulation time is in general more hazardous, as is the use of recalcified citrate or oxalate plasma.

A prolonged coagulation of the blood in the absence of any anticoagulant therapy is almost pathognomonic of haemophilia, since the other conditions which cause this are rarely encountered. In purpuric states it is the platelets which are important. If, in a well-stained smear of peripheral blood, platelets are scanty or absent, it is of little importance to perform more complicated tests. A platelet count may be done but the range of error is wide. If one is wise, one will draw no more conclusions from the count than that the numbers of platelets are normal, somewhat reduced or greatly reduced. Small variations in platelet counts are of no importance.

The bleeding time and clot retraction usually parallel the platelet count as does the prothrombin consumption test and, in the presence of thrombocytopenia, add little to the diagnosis and are usually unnecessary. The bleeding time is occasionally prolonged in the absence of thrombocytopenia (so-called athrombocytopenic purpura), but in general it is an inaccurate method of counting platelets. The Hess test is usually positive in thrombocytopenia but

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plaatjies normaal in getal is. Die werklike betekenis bly onseker, maar dit word gewoonlik beskou as 'n indeks van haarvatbrosheid. As trombosietopenie eers bewys is, mag dit help om vordering te bepaal, daar 'n normale telling verkry word soos die plaatjie-telling na normaal terugkeer.

Die skatting van protrombien-doeltreffendheid (die sogenaamde protrombientyd) is 'n belangrike toets, maar daar moet nie te veel teoretiese gevolgtrekkings gemaak word van die „Quick" een-stadiumse protrombien-tydbepaling nie. Dit is 'n waardevolle toets met die beheer van anti-verstollingsterapie en sal abnormaliteite van die protrombien-kompleks ontbloot, maar die verduideliking van die presiese tekort vereis baie gespesialiseerde studie waarby twee-stadiumse metodes om protrombien-doeltreffendheid te meet meer behulpsaam is.

As die beginsels wat bogenoemde laboratoriumtoetse ten grondslag lê meer ten volle begryp word, sal hulle meer oordeelkundig gebruik word, en baie waardevolle inligting sal dan van hulle verkry word.

may be positive when platelets are normal in number. Its exact significance remains obscure but it is generally regarded as an index of capillary fragility. When thrombocytopenia has once been demonstrated it may be helpful in assessing progress since a normal result is obtained as the platelet count returns towards normal.

The estimation of prothrombin efficiency (the so-called prothrombin time) is an important test but too many theoretical inferences should not be drawn from the 'Quick' one-stage prothrombin time determination. It is a valuable test in the control of anticoagulant therapy and will disclose abnormalities of the prothrombin complex, but the elucidation of the exact deficiency requires very specialized study in which two-stage methods of measuring prothrombin efficiency are more helpful.

If the principles underlying the abovementioned laboratory tests were more fully appreciated, they would be used with more discrimination and much valuable information would then be obtained from them.

THE DIPHTHERIA ANTITOXIN CONTENT OF THE SERUM OF THE BANTU

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The immunity of the South African Native to diphtheria as measured by the Schick test and by the antitoxin content of the serum has been investigated by Grasset *et al.*,[8] and by the Schick test only by Murray.[10] In addition, these workers reviewed and discussed the earlier relevant literature thoroughly. More recently Singleton [12] carried out an immunity survey of Kenya Africans by the Schick test.

The smallest amount of circulating antitoxin necessary to produce the Schick negative state cannot be fixed with precision but would appear to be about 0.004 unit/ml. serum [2-5, 11] and not 0.03 unit/ml. as stated in the earlier literature. Our own results, although small in number, confirm this finding. Each of 32 guinea-pigs with a serum-antitoxin titre of 0.002 unit/ml. or less had a positive reaction; in 10 animals with 0.004 unit/ml. the reaction was negative in 7 and doubtfully positive in 3; in each of many hundreds with 0.01 unit/ml. or more the reaction was negative. The reaction in 72 of 74 young nurses with 0.002 unit/ml. or less was positive, in 1 of 2 of these with 0.002 unit/ml. it was negative and in the other it was doubtfully positive; in 9 with 0.004 unit/ml. and in 4 with 0.01 unit/ml. it was negative. Thus, the information given by the Schick test is that the serum antitoxin content is either above or below about 0.004 unit/ml., but it does not show how much above or below.

Grasset *et al.* estimated the serum antitoxin content but by the method used by them (subcutaneous injection of toxin-serum mixtures into guinea-pigs) the smallest amount detectable was 0.02 unit/ml. Except for cord blood titrations of newly born babies, they carried out no titrations of the sera of very young children and babies. Thus, no figures are available showing the antitoxin content of sera from children of between 1 month and 4 years, a group in which a large percentage of diphtheria-susceptible persons would be likely to be found.

The results given in this article supply these figures and, in addition, give titrations to 0.001 unit/ml. serum as the lowest limit in place of 0.02 unit/ml.

MATERIALS AND METHODS

Sera. The sera from 598 unimmunized urban Natives (detribalized Natives of mixed origin) and 186 unimmunized Transkei rural Natives (Tembu, Fingo and a few Pondo) were titrated for their diphtheria antitoxin content. The number from the Transkei is smaller because of the difficulty of organizing the collection of blood in the isolated districts of this area, but was sufficient to show that these sera did not differ materially from those of the urban Native.

Antitoxin Titrations. The antitoxin content of sera was

ascertained by injecting toxin-serum mixtures intracutaneously into guinea-pigs. The same stabilized toxin, capable of detecting 0.001 unit of antitoxin per ml. of serum, was used throughout the investigation, which lasted for nearly 3 years. Its potency did not change during this period.

RESULTS

The serum-antitoxin titres arranged by age-groups are shown in Figs. 1 and 2. The over-all picture is what could have been predicted. Antitoxin, passively transmitted from the mother, is present in the sera of most of the very young babies; the amount of antitoxin per individual and the number of individuals with antitoxin decrease until, in the 1–2-year-old group, few sera contain any; this position is maintained until about the fourth year of life, after which there is a gradual rise in the number of individuals with circulating antitoxin and in the amount per individual until, in the > 15-year-old group, there is none without some demonstrable antitoxin and most have 0.1 unit/ml. serum or more.

Of the 598 urban Native sera, 296 came from males and 302 from females. Examination of the results revealed no differences due to sex and for this reason data from males and females have been pooled.

On the assumption that 0.004 unit antitoxin/ml. serum renders a person Schick-negative, a curve, showing the percentage of Schick-positive individuals in each age-group has been constructed (Fig. 3) with curves adapted from the data of Grasset *et al.* and of Murray. Bearing in mind that the age grouping differs with each worker, there is close agreement among the results and it is particularly interesting to note that at least 90% of children of 12 years of age and more are Schick-negative. Singleton's results with African school children in Nairobi are similar; of 686 children between the ages of 7 and 17 years, 88.6% were Schick-negative.

The amount of circulating antitoxin that will prevent the development of diphtheria cannot be fixed with certainty. Ipsen [9] notes that between 0.01 and 0.03 unit/ml.

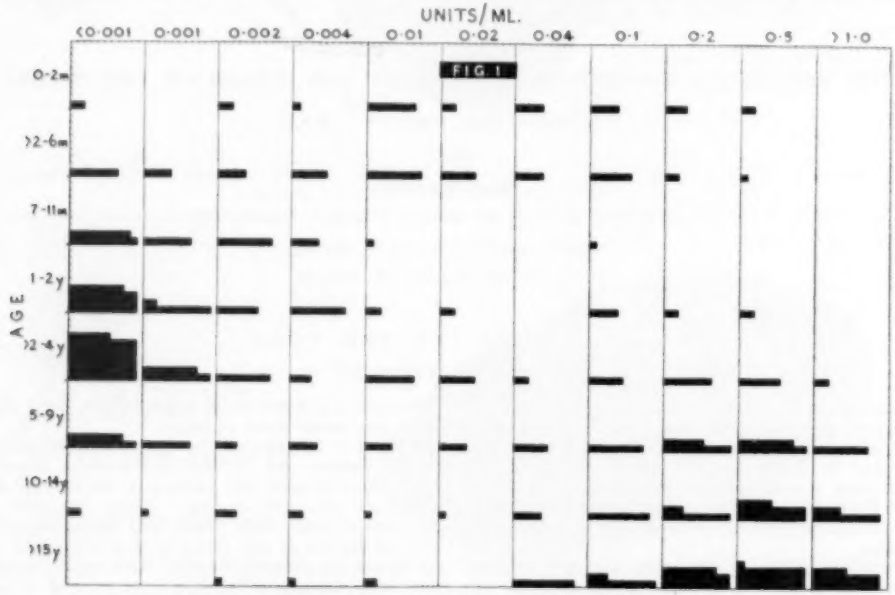

Fig. 1. Diphtheria antitoxin content of the sera of urban Natives.
One square = 1 individual.
m = months.
y = years.

In each age-group there is a considerable scatter of antitoxin values. In the very young babies this reflects the corresponding scatter of the serum antitoxin titres of the mothers,[1] but in the older children it is determined by the number of clinical or sub-clinical attacks sustained, by the ability of the individual to produce antitoxin after antigenic stimulation and by the time elapsing between the last stimulus and the taking of the blood sample. The results obtained with urban (Fig. 1) and rural (Fig. 2) Bantu sera agree very closely.

of serum should give immunity but says that there are reports of individuals who suffered an attack in spite of having more than 0.01 unit/ml. The report of Hartley *et al.*[8] emphasizes the difficulty of correlating the serum-antitoxin titre and immunity to diphtheria. They record numerous examples of immunized children with more than 0.1 unit/ml. who suffered from the disease, but it must be pointed out that the *gravis* type of *C. diphtheriae* was nearly always responsible. Bearing in mind the impossibility of arriving at a definite figure but assuming that 0.04

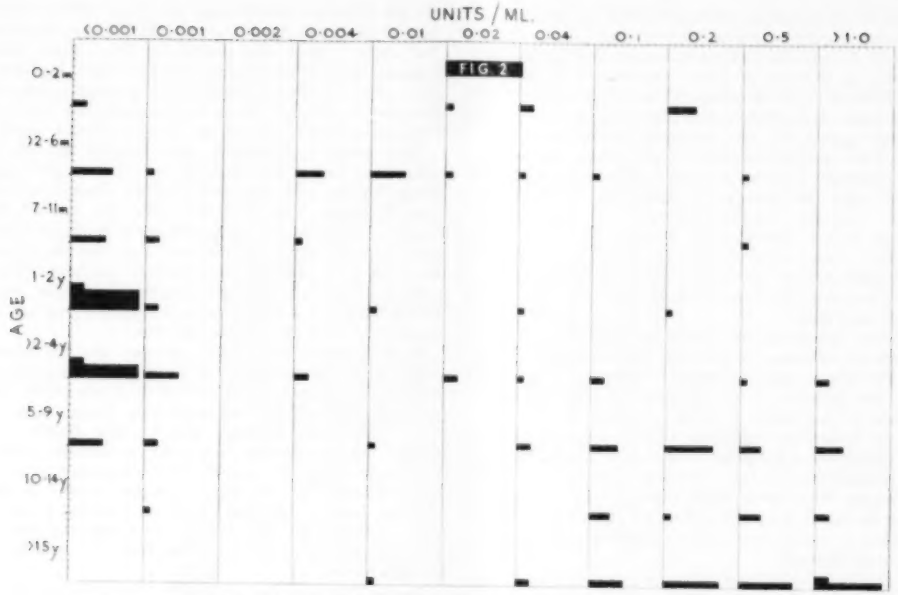

Fig. 2. Diphtheria antitoxin content of the sera of rural Natives.

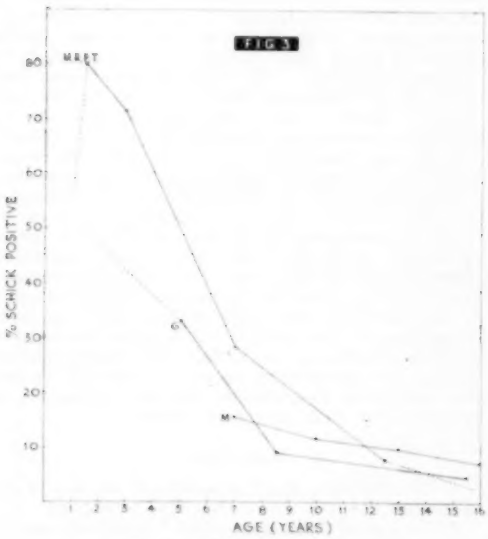

Fig. 3 Schick test in Natives.
Age Groupings.
M.R.P.T. = present authors: 1—2, > 2—4, 5—9, 10—15.
G = Grasset *et al.*: 4—6, 7—10, 11—20.
M = Murray: 6—8, 9—11, 12—14, 15—17.
The middle age of each group is plotted.

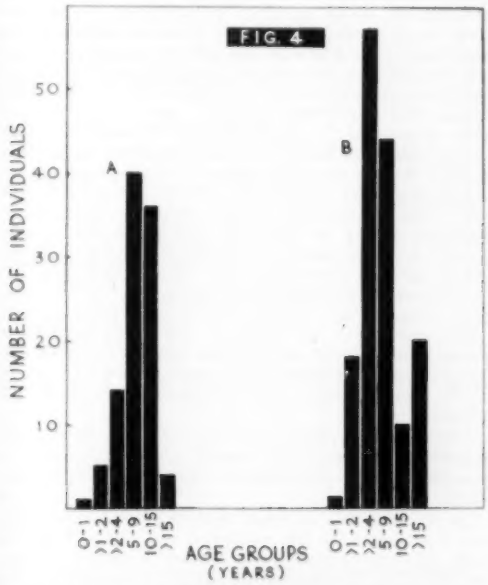

Fig. 4. Diphtheria incidence by groups in two areas.
A = rural: B = urban.

unit/ml. is the minimum protective titre as distinct from the Schnick-negative level of 0.004 unit/ml., it will be seen from Figs. 1 and 2 that the incidence of diphtheria should be highest in children of from 7 months to 4 years and lowest in those over 10 years. Grasset *et al.* report that 'all the cases of diphtheria in Natives which we were able to observe personally, or concerning which we were furnished with reliable medical information, occurred in children between the ages of 1 and 6 years, the range which coincides with the maximum percentage of susceptible subjects'. Murray records that of 66 clinical cases occurring in the Protectorates between 1935 and 1939, 21 (31.8%) were in the 0–2 years group, 14 (21.2%) in the 2-5 years group, 14 (21.2%) in the 5-10 years group, 7 (10.6%) in the 10-15 years group, and 10 (15.2%) aged 15 years and over.

Singleton tabulated the officially reported diphtheria incidence in Africans in Nairobi for the years 1946 to 1949. For the 4 years, the figures were (age—number of cases): 0-2 months, 1; 2-6 months, 3; 7-11 months, 4; 1-2 years, 9; 2-4 years, 5; child, 1; adult, 7.

Fig. 4A depicts the incidence of diphtheria in Natives in the Matatiele (Transkei) outbreak arranged in age-groups conforming to those already used in this article but differing from those used originally by one of us,[12] and Fig. 4B shows the incidence between 1946 and 1951 as it occurred in the Lady Selborne Health Centre, Pretoria (Preiss, unpublished).

The experience of Grasset and his co-workers is in very close harmony with what could have been expected from the work recorded here. Although, from Murray's summary, the largest incidence (31.8%) is in members of the 0–2-year-old group, yet 15.2% of people of 15 years and over were involved. In the Matatiele outbreak, the incidence of the disease in the different age groups is not far removed from the expected except that there is a somewhat large number in the 10–14-year-old group. It would appear that these were 'popular' ages and, of the 113 cases depicted in Fig. 4A, no less than 13 gave their ages as, or were taken to be, 12 years. If some of these were, in fact, 9 years the appearance of the chart would more nearly approach 'normal'. If only the males included in Fig. 4B are considered, a very good reflection of the serum-antitoxin picture is obtained. The age-group disease-incidence was as follows: 0-11 months, 1; 1-2 years, 10; 2-4 years, 32; 5-9 years, 18; 10-14 years, 1; 15-20 years, 1; > 20 years, 3. For females, the figures were: 0-11 months, 0; 1-2 years, 8; 2-4 years, 25; 5-9 years, 26; 10-14 years, 9; 15-20 years, 5; > 20 years, 11. There is no obvious reason why females of 10 years and more should be attacked more frequently than males of this age, except that it would be they who would nurse younger infected children.

The incidence of the disease in Africans in Nairobi follows the pattern to be expected from serum-antitoxin concentration, but again there is a somewhat high incidence in the older people.

In the Matatiele outbreak, systematic throat swabbing was not carried out for reasons already given.[12] In the Lady Selborne Health Centre, the final diagnosis was not made until a positive throat swab report had been received.

There is every reason to believe that all the sera tested were from unimmunized Natives. In the Lady Selborne Health Centre, a file is kept for every Native or Native family dealt with, and the medical history is entered on the cards. Thus the chance of the serum from an immunized individual being tested is small, but even if a few such sera were included, the general picture would scarcely be affected. There was no possibility of sera from immunized Natives from the Transkei being tested.

The antitoxin titrations were carried out at 100% increments and a titre recorded as 0.5 unit/ml. could, on closer testing, turn out to be slightly greater or slightly less, but again, this would not affect the over-all picture. Further, they are in close agreement with those of Grasset *et al.* who found that of 133 sera from Natives of between the ages of 7 and 40 years, only 9 contained less than 0.02 unit/ml., whereas 102 contained between 0.04 and 0.5 unit/ml.; it is almost certain that some of the 9 sera contained more than 0.001 unit/ml.

It is tempting to suggest reasons for the somewhat higher-than-expected incidence in the older children of the Matatiele outbreak, such as lowered resistance due to undernourishment and accompanying streptococcal infection. However, Hartley, Evans, and Hartley[7] have shown that guinea-pigs subjected to hunger, cold, and intoxication with *Cl. welchii* toxin responded to a secondary stimulus of a diphtheria antigen equally as well as healthy, control animals. Further, Hartley *et al.*[8] state that an added infection of the throat with microbes other than *C. diphtheriae* bore no relation to the severity of the disease in man.

In the Transkei, the number of individuals infected was small compared with that at risk, the disease was encountered mainly in school-going children, and the school was almost certainly an important factor in the dissemination of the disease. Thus the opportunity was there for the disease to attack older non-immunes just as easily as younger susceptibles. The same argument could hold good for the age-group disease incidence in the Lady Selborne Health Centre. However, in spite of the apparent discrepancies, the disease in the Transkei, Pretoria, and Nairobi did attack those whose low serum-antitoxin titres rendered them susceptible to diphtheria.

In addition to the academic interest of a knowledge of the serum antitoxin distribution by age-group, it has an important epidemiological bearing. If allowed to spread unopposed, diphtheria would attack young children in greater proportion than older. Thus, artificial immunization should start with individuals in the 1-2-year-old group. If these develop a solid basal immunity, they will either be immune at a later date or will be ready to respond to sub-clinical infections; or, if they later become infected, there is every likelihood of the attack being mild. Further, the more infant immunization there is, the less will be the number of older susceptible children.

CONCLUSIONS

1. The diphtheria antitoxin content of the sera of 598 urban and 186 rural Natives has been ascertained.

2. The sera of most babies under 7 months of age contain passively transmitted antitoxin; the sera of those between 1 and 4 years contain little or no antitoxin; there is a gradual rise in the serum antitoxin content with age until, at about the 12th year of life, most sera contain some antitoxin, many in considerable amount.

3. There is a correlation between the serum antitoxin content and the reported incidence of diphtheria. However, the incidence of the disease in members of the older age-groups is somewhat larger than would be anticipated.

Our thanks are due to Dr. J. H. Loots, Superintendent of the Rietfontein Hospital, and the late Dr. A. Altmann, one time pediatrician, Baragwanath Hospital, for blood samples; to Sister Mansvelt who gave great assistance at the Lady Selborne Health Centre and to Miss M. Widdicombe of the Serum Department of the S.A. Institute for Medical Research, who prepared the charts appearing in this article.

REFERENCES

1. Barr, M., Glenny, A. T. and Randall, K. J. (1949): Lancet, **ii**, 324.
2. Barr, M. and Parish, H. J. (1950): Monthly Bull. Min. Health & Pub. Health Lab. Service, **9**, 97.
3. Barr, M. and Glenny, A. T. (1951): J. Roy. Army Med. Corps, **96**, 77.
4. Downie, A. W., Glenny, A. T., Parish, H. J., Smith, W. and Wilson, G. S. (1941): Brit. Med. J., **2**, 717.
5. Glenny, A. T. and Waddington, H. (1929): J. Path. Bact., **32**, 275.
6. Grasset, E., Perret-Gentil, A., Friedman, J. and Gross, I. (1933): S. Afr. Med. J., **7**, 779.
7. Hartley, P., Evans, D. G. and Hartley, O. M. (1943): Lancet, **ii**, 314.
8. Hartley, P. *et al.* (1950): Med. Res. Council: Spec. Rpt. Series, No. 272. H.M. Stationery Office.
9. Ipsen, J. (1946): J. Immunol., **54**, 325.
10. Murray, J. F. (1943): J. Hygiene, **43**, 159.
11. Parish, H. J. and Wright, J. (1935): Lancet, **i**, 600.
12. Singleton, A. C. B. (1950): East Afr. Med. J., **27**, 246.
13. Turnbull, N. S. (1949): Trans. Roy. Soc. Trop. Med. Hyg., **43**, 215.

INVESTIGATION OF STILLBIRTHS AND DEATHS OF CHILDREN UNDER 5 YEARS OF AGE

IN THE PRETORIA MUNICIPAL AREA (EXCLUSIVE OF LADY SELBORNE) FOR THE YEAR 1950

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The infantile mortality rate for Europeans in the City of Pretoria has become fairly fixed at approximately 33 since 1945. The figures for all groups of non-Europeans are much bigger and show more fluctuations. The European figures are fairly accurate but non-European statistics are notoriously inaccurate. In general, population estimates are usually too low. Deaths are notified more readily than births. The result is that non-European death rates are usually too high and births too low.

In our official figures, births and deaths for Lady Selborne are included and rates are worked out accordingly, but I could not include that area in this investigation as we have as yet no Maternal and Child Welfare services there. In our Annual Report for the year 1949-1950 the Native infant deaths for that area were 289 against 141 for the whole of the rest of the Municipal Area.

Table I is extracted from the Annual Report for the City of Pretoria for the year 1949-1950 and it shows the general downward trend for Europeans. The non-European rate is also going down, but there is more fluctuation.

TABLE I: INFANTILE MORTALITY RATE PER 1,000 LIVE BIRTHS PRETORIA FOR ALL RACES SINCE 1943–1950

Year	*European*	*Natives*	*Asiatics*	*Eur-Africans*	*All Non-Europeans*	*Total for all Races*
1943–44	47·94	304·99	70·71	204·08	216·64	77·80
1944–45	33·98	289·69	86·49	105·26	206·45	63·50
1945–46	34·02	215·24	25·77	115·39	159·35	61·17
1946–47	25·90	235·16	54·73	161·29	178·27	53·78
1947–48	33·16	138·78	61·80	224·14	127·30	52·78
1948–49	33·65	203·06	82·47	200·00	170·77	60·97
1949–50	32·34	181·97	75·47	85·23	165·83	92·97

The infantile mortality rate of an area or a racial group is usually taken as an index of the standard of public health services. It is generally accepted, however, that when the rate is reduced to approximately 30, further reduction is due solely to obstetrics and pediatrics.[1] In the reduction of high rates to approximately 100, these two services play but a small part and environmental health and general standard of education play a much bigger role. By the proper combination of all services the rate can be reduced to 20, and in theory perhaps to 10.

In view of the above, and especially as the European rate had become stationary, it was considered worth doing a critical analysis of the position in Pretoria to find the weak spots.

The original intention was to include stillbirths as they are considered to be part of the problem of the loss of foetal life. It was, however, found that the available information, standards and figures were too unreliable.

The death notifications with other available details are routinely obtained from the Office of the Registrar of Births and Deaths. Further relevant information was obtained by the Health Visiting staff of the Municipal Health Department from the mother or other available relatives or adults concerned with the care of the child. In addition, all other information of a medical, social and economic nature was extracted from the record cards kept in connexion with each child born and resident in Pretoria.

All stillbirths, neonatal deaths and deaths of children under the age of 5 years were investigated for the year 1950. The statistical and other data used for classification in Table II are equally accurate for European and non-European cases. When all the possible information had become available each death was analysed separately and appraised on the following points:

i. Were the parents normally resident in Pretoria or not?

ii. Was the cause of death as certified correct or not?

iii. Was every effort made to prevent this death by the fullest application of modern medical knowledge, with the co-operation of the parents under average environmental circumstances?

If the answer to (iii) above was:

(a) 'Yes', it was classified as *non-preventable*.

(b) 'Doubtful', it was classified as *query non-preventable*.

(c) Indicative of negligence of some nature, or of a condition which recent research has proved to be largely preventable, it was classed as *query preventable*.

(d) Indicative of gross neglect or mismanagement or ignorance or unco-operativeness, it was classed as *preventable*.

A more detailed description of what is implied by the 4 terms used is given when the causes are dealt with later on in this paper.

Table IIa reflects the classification of all the cases which this investigation showed to be Pretoria residents. The figures in brackets are those which were received from the Office of the Registrar of Birth and Deaths. Table IIb is the classification of non-Pretoria resident cases which were included in the information received from the Registrar of Births and Deaths.

TABLE II: CLASSIFICATION OF PREVENTABLE AND NON-PREVENTABLE DEATHS AMONGST ALL RACES IN PRETORIA INFANTS FROM JANUARY 1950 TO DECEMBER 1950

TABLE IIa: MUNICIPAL CASES

	Total	Non-preventable	Query Non-preventable	Query Preventable	Preventable
Natives:					
Total ..	105 (154)	3	15	37	50
Percentage ..		2·9	14	35	47·6
Indian:					
Total ..	11 (15)	1	2	5	3
Percentage ..					
Coloured:					
Total ..	13 (14)	2	1	3	4
Percentage ..					
European:					
Total ..	109 (116)	23	33	33	20
Percentage ..		21	30	30	18

TABLE IIb: NON-MUNICIPAL INCOMPLETELY CLASSIFIED CASES

	Outside Cases Total	Outside Cases Live Births	Unclassified Cases Live Births
Native	49	24	25
Indian	4	2	2
Coloured	1	1	0
European	7	3	4

i. *Were the Parents Normally Resident in Pretoria or not?* Classification in answer to the first question showed up the inaccuracy in regard to non-European statistics. According to the information received from the Registrar's office, 154 deaths occurred amongst Natives living in Pretoria, our check investigation showed that the actual figure, when corrected for outward transfers, was only 105. Great care was taken to get this figure as accurately as possible. The Health Visitors were fully instructed about the aims of the investigation and went to a great deal of trouble to get full details. It was difficult to correct for inward transfers, but if there is an error it must be very small because, in our experience, very few Native residents of Pretoria leave this area. The remaining 49 were made up of patients brought into the area for medical attention only. Of these 24 gave a definite temporary local address and in 25 cases it was not possible to decide the place of residence definitely because of the migratory habits of the persons concerned. They did however definitely not belong to Pretoria. If this number, 49, which for the year 1950 was very nearly $\frac{1}{4}$ of all deaths, is subtracted from the figure given by the Registrar of Births and Deaths the Native infantile mortality rate figure is much lower than the official one quoted.

The European figure is much more accurate but even here, 7 were considered to be 'outside cases', leaving 109 for classification.

ii. *Was the Cause of Death as Certified Correct or not?* This question, for reasons which will be enlarged on later, was very difficult to answer and it was decided not to go into detail but to make some general observations. In the non-European group many cases occurred where I had every reason to believe that the cause of death was wrongly certified. Malnutrition, e.g. was often given as the cause of death whereas our records showed the patient had a tuberculous or luetic infection. There is no doubt that the term malnutrition is much abused and a variety of chronic infections such as bilharziasis, chronic cystitis and worm infestations are often missed and covered by this term which is only a secondary manifestation of the illness. Fewer errors were made in the certification of European deaths.

iii. *Was Every Effort Made to Prevent this Death?* The preventability or otherwise, or the presence of preventable factors was very carefully investigated. In theory all infectious and contagious diseases are preventable, but in the critical analysis of each case due attention was paid to many practical questions.

Take, e.g. the investigation of a case of infantile enteritis and diarrhoea. The age and method of feeding were the first items to be checked. The importance of breast feeding in the prevention of the incidence and mortality from enteritis and diarrhoea can hardly be over-estimated as is shown by the work by Taylor, Powell and Wright.[2] From their total of 118 cases of enteritis and diarrhoea only one was breast fed. Feldman[3] reports the infantile mortality rate to be 22.9 per 1,000 livebirth in breast-fed infants as against 108.3 per 1,000 livebirths in artificially fed infants.

If such a child was therefore taken off the breast without good cause, and enteritis and death occurred during the normal period of breast feeding, a preventable factor was considered to have been present. The second item checked was whether medical aid was sought early enough, and if so whether the advice given was carried out. The next question was whether the medical advice and treatment was the best in the circumstances, taking all factors into consideration, with particular attention to 'maternal efficiency', which is the ability of the mother to cope effectively with the ordinary problems of family rearing and management, general hygiene and environmental and economic factors which may have interfered with the success of the treatment.

Taking all the above factors into consideration some cases of enteritis were classified as preventable and others as non-preventable.

(a) *Non-Preventable Group.* It was considered that of the European deaths 23 or 21% were non-preventable. Of the 23, 11 deaths were due to acute infectious conditions where the course of the illness was so rapid that death occurred before treatment could be effective. Most of the others were due to obstetrical complications which seemed unavoidable.

Amongst the Natives only 3 were considered non-preventable. This figure is so low because good environmental circumstances were rare, or the advice given was not competently carried out by the mother.

The numbers for the Coloureds and Indians are too small to warrant any worth-while conclusions.

(b) *Query Non-Preventable Group.* This group consisted largely of cases where the presumably preventable factor is still a matter of medical controversy or where the appraisor felt that one could not be dogmatic. They consisted almost exclusively of deaths from complications of pregnancy, birth injuries and congenital abnormalities. Most of the birth injuries were certified as intracranial haemorrhage and this is a condition which is considered to be at least partially preventable by good ante-natal care as was shown at the Sagene Health Station in Oslo [4] where not a single case of brain damage occured amongst 1,531 live born infants (the average incidence is 0.5%). Good obstetrics can further materially reduce the incidence of neonatal mortality as can be seen from the figures of the Royal Maternity Hospital, Belfast,[5] where the deaths from placenta praevia were reduced from 51.3% to 18.8%.

There is much scepticism about the preventability of congenital defects but the following statement appeared in the *Medical Officer* [6]: 'Until recently our attitude towards these defects was completely pessimistic, but research has led us to hope that some at least are preventable.' Formerly most congenital defects were held to be genetic, but many are due to cessation or retardation of development at certain critical periods and may be caused by intra-uterine factors which may be reversible.

The work of Gregg [7] in Australia, and others, showed how a mild infectious disease such as German measles in the pregnant mother may affect the development of the foetus during certain critical periods of its development. Our series included one such case.

The work of Warkany [8] who induced a large variety of developmental abnormalities in the young of rats by vitamin privation of the adult before and during pregnancy, can also not be ignored, although its application to the human field is at this stage of our knowledge still obscure.

It will be noticed that from our figures it appears as though death due to complications of pregnancy, birth injury and congenital defect is considerably higher in the European than the non-European.

(c) *Query Preventable Group.* This group differs from the previous one in that there was more positive proof of negligence or preventibility. Of the 33 European cases 27 were due to prematurity which, as a cause of death in Pretoria, far out-strips any other single cause. There is ample evidence that the incidence of premature births can be very much reduced by good ante-natal care. Nutrition during the pre-natal period is of particular importance as can be seen from the following:

(a) Antonov [9] reports that during the siege of Leningrad when hunger was marked, the incidence of prematurity rose to more than 40%.

(b) The experience in Oslo [4] was that by adequate nutrition premature births could be reduced from 4.6% to 2.2%.

(c) Similar results were obtained by Burke *et al.*[10] who demonstrated a relationship between maternal diet, length, weight and general vigour of the infant.

In 3 cases maternal irresponsibility was an outstanding feature and had contributed directly to the death of the infant.

The non-European cases were of a mixed nature. If the statement on the death certificate was accepted without applying any other standards, 13 of the 37 Native cases in this group were premature. This figure is, however, not reliable as few Native infants are weighed at birth and even if they are weighed there is still no general agreement on what weight should be accepted as a standard for prematurity in non-Europeans.[11]

The bulk of the rest of the cases were infectious conditions where medical help was not sought early enough and the facilities available at the Municipal Clinics were never made use of. The objections to calling in medical aid were mostly religious.

In several instances a wrong diagnosis was made and wrong treatment prescribed. The circumstances surrounding non-European medical practice are such that this is not surprising.

iv. *Preventable Group.* In the preventable group the difference in incidence between the European and non-European is very marked. This is, of course, to be expected. Of the 20 Europeans, 10 were considered to be directly due to parental negligence. In all these cases there was a long history of neglect of the infant and unwillingness to co-operate with medical, nursing and social welfare personnel. In 5 cases the inadequacy of the ante-natal care and the manner and circumstances in which the confinements were conducted contributed directly to the death of the infant.

The remaining 5 were due to preventable infectious diseases such as diphtheria.

Of the 50 Native deaths, 34 were primarily due to neglect and malnutrition with pneumonia or enteritis as a complication in the majority of the cases. Four deaths could have been prevented by adequate ante-natal care. The rest were chronic infectious conditions such as syphilis and tuberculosis.

DISCUSSION

This investigation is concerned with the preventable factors which contributed to the great loss of life amongst infants. In countries with reliable statistics, the greatest loss is from stillbirths and neonatal deaths. These two conditions form a natural aetiological grouping, and before the last war they caused 43,000 deaths per 607,000 live births [12] in England; 60-70% of neonatal deaths are considered to be due to conditions related to the birth such as prematurity, injury or asphyxia.[13]

The most important factor in neonatal deaths is undoubtedly prematurity. According to McGregor [14] 70.5% of neonatal deaths were in prematures. We have

no comparable figures because there is no uniform definition of prematurity in this country.

McGregor further found defects in development in 10.5% of neonatal deaths. Again we have no figures for this.

The experience in Oslo has been that the incidence of prematurity can be reduced by 50% with proper ante-natal care.[4] The excellent results in this experiment are considered largely due to nutritional factors. Balfour *et al.*[15] gave supplementary feeding to more than 11,000 pregnant women with a control group of 8,000 and they found a marked reduction in the neonatal mortality.

The work of Ebbs *et al.*[16] shows that the health and nutrition of the mother during pregnancy influences the health of the child during at least the first year of its life.

No specific figures are available for this investigation to show the importance of pre-natal factors in Pretoria, but it certainly plays a very important role. The majority of the 27 European cases of prematurity which were classified under the 'query preventable' group were considered to have had insufficient ante-natal care.

The importance of natal factors could not be judged because the information about the circumstances and the conduct of the confinements was not sufficiently reliable. This is, however, an extremely important factor in the over-all picture and the lack of information is deplored.

The part played by post-natal causation has already been partly covered as much of the mortality and morbidity in early infancy has its roots in the pre-natal period. When ante-natal factors are excluded, the most important post-natal factor appears to be 'maternal efficiency'. Amongst the Europeans 18 and perhaps 21 deaths were considered to have been due to 'maternal inefficiency'. It must be emphasized that maternal inefficiency also plays a very considerable part in the ante-natal and natal factors. Maternal inefficiency is often combined with poor economic conditions, but not necessarily so. There is ample proof that this 'maternal irresponsibility' is often the cause of poverty and bad environmental conditions, and *not* the result of it.

The next most important factors in prevention are 'medical conditions', such as preventable infectious disease like diphtheria and tuberculosis. In several European cases it was felt that the seriousness of the condition was overlooked in the first instance, and the proper treatment was started too late. Amongst non-Europeans misdiagnosis and wrong treatment were more common.

Environmental health factors were considered to have played a very small part in the causation of European deaths. In the non-European it played a bigger part but not as big as is commonly assumed. The main causes of death in the first 5 years of life are prematurity, diarrhoeal diseases, pulmonary infections and malnutrition. In the past these have all been ascribed to adverse environmental conditions. The results of this investigation showed that parental ignorance, unwillingness to co-operate and often apparently wilful neglect also play a very important part.

The most disturbing aspect of this investigation is the lack of accurate standards and statistics. This was already pointed out and deplored by Nelson in an article on *Infantile Mortality* in 1947.[17]

As mentioned earlier, publication of the work on stillbirths had to be withheld when certain statistical errors were shown up. When European figures for several of the bigger centres in South Africa were investigated it appeared that the stillbirth rates varied from approximately 8 to 11, whereas the lowest recorded rate outside South Africa is 23.9,[18] for the United States of America in 1945. The figure for England and Wales for 1945 was 28.[19] This discrepancy is partially due to the fact that there is no single international definition of what is meant by a stillbirth.

Similar lack of standardization in the Union of South Africa exists in connexion with the definition of prematurity, with much less justification. The international standard is commonly used in Great Britain and the United States and it should be adopted here.

The main conclusions from the investigation are that much of the loss of life through the high infantile mortality in Pretoria is preventable. Although the figure in the European preventable group is only 20, it was estimated that a total of 41 lives could possibly have been saved. To effect this reduction there will, however, have to be much closer co-operation between all concerned.

The best way of effecting this co-operation is to follow the procedure practised in Philadelphia. There a committee consisting of representatives from the Medical School, the Medical Society, the Pediatric Society and the Health Department, meets regularly to review neonatal deaths.[20] They go into (1) the cause of death; (2) rating of responsibility; (3) preventability or not.

A similar system is in vogue in Baltimore in regard to maternal mortality.[21] They have found that half to one-third of all maternal deaths are preventable, and by focussing the attention of medical men on the preventable factors they have been able to reduce the death rate very considerably.

The work of these committees is confidential and the name of the patient, the medical or nursing attendant is not disclosed.

There is no doubt that a committee with representatives from all interested medical groups will serve a very useful purpose in Pretoria. If such a committee undertakes a detailed and critical investigation more or less on the lines of this pilot study, including if necessary a post-mortem examination of each case, it will be able to arrive at a much more accurate diagnosis of the cause of death and rating of preventability. It is very necessary that in addition to the medical specialist mentioned in the Philadelphia report, an obstetrician and a capable pathologist should be included. The whole problem of premature births and the care of premature babies must be investigated fully and this can only be done by a team of experts.

Not only would such a committee be of enormous help in the compilation of more accurate statistical data and the definition of standards, but it will also be of great educational value to the profession. In addition it will help those who have to educate the public. Last but not least, it will be able to contribute considerably to scientific knowledge.

My thanks are due to Dr. H. Nelson of the City Health Department, Pretoria, for permission to publish this material

and for his advice. I would also like to thank Dr. Harding le Riche for his help and all the Health Visitors of the City Health Department, Pretoria, who assisted with the collection of the material.

REFERENCES

1. Leader (1947): Med. Off., **77,** 257.
2. Taylor, J., Powell, B. W. and Wright, J. (1949): Brit. Med. J., **2,** 1501.
3. Feldman, W. (1949): *Neonatal Mortality and Morbidity*, Min. Health Rep., No. 94, p. 43.
4. Toverud, G. (1950): Milbank Mem. Fund. Quar., **28,** p. 21.
5. Macafee, G. H. G. (1949): *Neonatal Mortality and Morbidity*, Min. Health Rep., No. 94, p. 9.
6. Notes and Comments: *Congenital Malformations* (1947): Med. Off., **77,** 194.
7. Gregg, N. Mc.A. (1945): Med. J. Austral., **2,** 122.
8. Warkany, J. (1945): *Vitamins and Hormones*, Vol. 3. New York: Academic Press.
9. Antonov, A. N. (1947): J. Ped., **30,** 250.
10. Burke, Bertha S. *et al.* (1943): J. Pediat., **23,** 505.
11. Anderson, Nina A. *et al.* (1943): Amer. J. Dis. Child. **65,** 523.
12. Woolf, B. (1946): Brit. Med. Bull., **4,** 3.
13. *Neonatal Mortality and Morbidity* (1949): Min. Health Rep., No. 94, p. 6.
14. McGregor, Agnes (1946): Brit. Med. Bull., **4,** No. 3.
15. Balfour, M. J. *et al.* (1944): Lancet, **1,** 208.
16. Ebbs, J. H., Tisdall, F. F. *et al.* (1942): Canad. Med. Assoc. J., **46,** 6.
17. Nelson, H. (1947): S. Afr. Med. J., **21,** 695.
18. Potter, E. L., *Fetal and Neonatal Death*, p. 149. University of Chicago Press.
19. *Neonatal Mortality and Morbidity* (1949): Min. Health Rep., No. 49, p. 6.
20. Child Health Conference (1950): Pub. Hlth. Rep., **65,** 50, 1676.
21. Novey, A. M. (1945): Bull. School Med. Univ. Maryland, **30,** 1.

VERENIGINGSNUUS : ASSOCIATION NEWS

CAPE WESTERN BRANCH: MEETING HELD ON 29 AUGUST 1952

The main business of the evening was a presentation of cases, showing orthopaedic advances in recent years, arranged by Mr. A. Helfet.

Mr. Hamilton Bell, recently returned from overseas, showed first some examples of arthroplasty of the hip joint in which a new metal vitallium and acrylic material played an important part. He demonstrated cases of cup arthroplasty and cases in which an acrylic head of the femur had been used. He then discussed a new approach in the treatment of rehabilitation of paraplegics. Immense advances had been made, giving these people a new outlook in life. First, and most important, was the training to establish some control of the bladder and bowels, massage and limb movement; later the patients were allowed to walk on light calipers and to go home. Such patients should not be allowed to go to places like the Conradie Hospital; they should go home and be trained for some sort of employment.

Mr. Commerell showed 2 cases of club foot. In the first a capsulotomy of the posterior capsule had been performed with much improved movement; the second was a case of neglected club foot which had improved with manipulation and P.O.P. treatment. He also showed a case of hypertrophic degenerative arthritis of the cervical spine with relief obtained by a special head brace designed to immobilize the cervical joints.

Mr. MacMurray presented 2 problems in diagnosis:

1. A shoulder injury: supraspinatus tear which had to be distinguished from a subluxation of the acromio-clavicular joint.

2. A forearm injury causing pain in the shoulder and adhesion formation in the superior part of the capsule limiting abduction but not extension.

Mr. Helfet showed some examples of reconstructive orthopaedics which had become possible through the antibiotics, improved intravenous blood and saline technique during operation, and the use of alloys and plastics. The cases were:

1. Osteomyelitis of the upper end of the humerus with sequestration: alloy fitted.

2. Reconstruction of the hip joint to relieve backache: cup fitted to the upper end of the femur.

3. Arthroplasty of the hip: angled femur.

4. Artificial head and neck of femur fitted in an elderly woman.

5. Ankylosing spondylitis of the spine: a man disfigured and crippled by maximal kyphosis was markedly relieved by wedge-removing operations.

Discussion: Dr. Coplans, Dr. J. H. L. Shapiro and Mr. MacMurray took part. The President pointed out that the Red Cross was making a survey, on a national basis, of paraplegics so as to devise a scheme of treatment. Dr. Bell criticized this on the grounds of delay and cumbersome machinery. We should 'get cracking' now, and in local areas like the Cape a national survey would not get us ahead.

Itinerant Practice: The circular from the Secretary was brought to the notice of the meeting. The issue was whether Federal Council should seek to obtain an alteration of the relevant passage in the Medical, Dental and Pharmacy Act which reads: 'For a medical practitioner to carry on a regularly recurring itinerant practice at a place where a medical practitioner is established, or in the case of a specialist where a specialist in the same speciality is resident and in practice'.

The Secretary explained that a sub-committee of Federal Council had considered the matter carefully and had concluded that since the drafting of this particular rule regarding itinerant practice, times and transport facilities had changed a great deal and a doctor carrying on a practice at a place distant from his residence and main practice was to-day able to give full service and not rely on the local practitioner to 'fill a gap' for him. Minimal restriction of practice and free choice of doctor were cardinal principles of the Association. The Committee recommended an alteration to the rule, and the Branch was asked for an answer to the following questionnaire:

1. Are you in favour of retaining Clause 4, concerning itinerant practice, as it stands?

2. Are you in favour of deleting Clause 4 or amending it according to the suggestion contained in the memorandum?

After discussion by Dr. J. H. L. Shapiro and Dr. Z. J. de Beer it appeared that the matter might be referred back to the Branch Council for a decision. However, Dr. Lee then proposed, seconded by Dr. Resnick, that the meeting approve of an amendment to the rule, answering question (2) of the questionnaire in the affirmative. The motion was carried and the meeting adjourned at 10.30 p.m. Refreshments were served by courtesy of the Medical Superintendent.

PASSING EVENTS

Dr. D. P. de Villiers, Gynaecologist and Obstetrician, formerly of Southern Life Buildings, St. George's Street, Cape Town, has moved to 803 Groote Kerk Gebou, Adderley Street, Cape Town.

Telephone: Consulting Rooms: 3-5303.

SOUTH AFRICAN ARCHAEOLOGICAL SOCIETY

This Society is designed to help the amateur and to co-operate with Members and Institutions in research and the protection of archaeological material and records. Funds are primarily devoted to publication.

The wide scope of prehistoric archaeology to-day (especially in South Africa) provides a focus for a dozen or more subjects. Man's past is no longer considered merely in terms of stone implements. He is re-created as a living being, thinking, inventing and existing in a complex environment of climate, flora and fauna; fighting for survival against 'Nature, red in tooth and claw.'

Members who have any interest in Man's past, in ancient climates, flora, fauna, in the development of river valleys, changes in sea level, the maturing of soils or the simple 'success story' of Man's rise from simpler beginnings, will find a focus for their interests in this Society.

Archaeology is so closely allied to medical science through physical anthropology that most medical schools in South Africa link it with the study of Man in the courses they provide. It seems a pity that so many practitioners drop this interest or lose it once they get into their professional stride, particularly as the science provides an excellent relaxation and at the same time a stimulus to thought and interest.

Members receive all publications during their term of membership.

Intending members may make application to the Honorary Secretary, South African Archaeological Society, P.O. Box 31, Claremont, C.P.

The Association of Military Surgeons of the United States: Annual Meeting

The 59th Annual Meeting of this Association will be held at the Statler Hotel, Washington, D.C., from 17 to 19 November 1952. A large number of scientific papers will be presented and there will be elaborate displays and technical exhibits illustrating the latest advances in military medical science.

On 18 November, as a fitting tribute to the physician-representatives of other countries, a special convocation is to be held during which each delegate from each country will be decorated with the medal and ribbon of the Society and have conferred upon him honorary membership in the Association.

On 20 and 21 November an international clinical symposium has been arranged for visitors from abroad. This will be held in the Washington area under the auspices of the Surgeons-General of the United States Army, Navy, Air Force, the Public Health Service, and the Medical Director of the Veterans Administration.

It is hoped that South Africa will be represented by the largest possible number of representatives in Washington on this memorable occasion.

Poisoning by Insecticides

A Government circular dated 3 September 1952 was issued to each local authority in the Union and to each Magistrate acting as a local authority, drawing attention to the fact that 'poisoning due to the manufacturing, handling, accidental consumption and using of insecticides, in gaseous, liquid, solid or powder form, shall be a notifiable disease throughout the Union of South Africa'.

All cases of insecticidal poisoning should be notified on Form 180 (Health) and to the Department's Regional Offices on Form 181 (Health).

A list of some of the more important insecticides is shown in Table I, which is an extract from *Agricultural Chemicals*, May 1951, Toxicity Hazards (Part I) by S. F. Bailey and L. M. Smith.

TABLE I

Chemical	Dangerous to Man			Poisonous Residue Left on Crops
	By Mouth	Inhalation	Skin Absorption	
Arsenate of lead	yes	yes	slight	yes
Aldrin	yes	yes	yes	yes
Benzene hexachloride	yes	slight	yes	yes
Chlordane, tech.	yes	yes	yes	yes
Calcium arsenate	yes	slight	slight	yes
DDD	yes	slight	slight	yes
DDT	yes	slight	slight	yes
DIELDRIN ..	yes	yes	yes	yes
Dinitro compounds	yes	yes	yes	no
Dithiocarbamate compounds ..	yes	no	no	no
Methoxyclor ..	yes	slight	no	yes
Mercury compounds ..	yes	yes	no	yes
Nicotine alkaloid ..	yes	yes	yes	no
Nicotine sulphate	yes	slight	yes	no
Oil, coal tar ..	yes	no	yes	no
Oil, petroleum*	yes	no	no	no
Pardichloroben-zene	yes	slight	no	no
Parathion ..	yes	yes	yes	yes
Pentachloro-phenol ..	yes	yes	yes	yes
Pyrethrins ..	yes	no	no	no
Quinones ..	yes	no	no	no
Rotenone ..	yes	slight	no	no
Sulphur ..	no	no	no	no
Lime-sulphur ..	yes	no	yes	no
Toxaphene ..	yes	yes	yes	yes
Tetraethyl pyrophosphate	yes	yes	yes	no
Zinc compounds	yes	—	no	yes

*These values apply only to the heavier petroleum fractions. The light fractions, such as kerosene, used as solvents have a definite toxicity to man and animals.

THE SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL

Report of an Enquiry into the Conduct of Dr. A. N. V-D.

At its meeting held in September 1952, the Council considered the report of a special Disciplinary Committee on an enquiry which it held into the conduct of Dr. A. N. V-D. in April 1952.

The following charges were preferred against the medical practitioner concerned:

That he, being a medical practitioner, registered under the Medical, Dental and Pharmacy Act 1928, as amended, is guilty of improper or disgraceful conduct, or conduct which, when regard is had to his profession or calling, is improper or disgraceful, in that:—

1. On or about 20 May 1950, and at . . . , he was under the influence of intoxicating liquor or drugs and in a condition to render him unfit to attend professionally to . . . which it was his duty to do;

2. In or about the month of December 1950, and a few days prior to Christmas, 1950, and at . . . , he occupied a bedroom set aside for use as living quarters by certain nursing sisters there employed, and occupied the said bedroom with one of the said nursing sisters . . . ;

3. That in or about the month of November 1951, while he was practising at . . . as a private practitioner, he paid regularly recurring itinerant visits to . . . , a town in which there was at relevant times a registered medical practitioner or practitioners resident and there practising. By so doing he acted contrary to Rule 4 of the Rules regarding Conduct of which the Council may take cognisance . . . ;

4. That on or about 24 September 1951, and at . . . he performed an operation for caesarean section on a female patient whose name is unknown to the Council, under improper conditions, namely without medical assistance;

5. That on or about 23 November 1951, and at . . . aforesaid, he performed an operation for caesarean section on a female patient . . . . under improper conditions, namely without

medical assistance and in circumstances and surroundings and under conditions which are improper, namely in a room in his own house;

6. That on or about 13 February 1952, and at . . . aforesaid, he performed an operation for tonsillectomy on a male patient . . . under improper conditions, namely without medical assistance and in circumstances and surroundings and under conditions which are improper, namely in his consulting room at . . .

The Council resolved that the practitioner concerned be found guilty on Counts 1, 3, 4 and 5 of conduct which when regard is had to his profession is improper, and on Count 6 of conduct which when regard is had to his profession, is disgraceful, and it has resolved that Dr. A. N. V-D. be suspended as a medical practitioner for a period of six months as from 1 October 1952.

He was found not guilty of Count 2.

THE BENEVOLENT FUND

The following contributions to the Benevolent Fund during August 1952, are gratefully acknowledged:—

Votive Cards: In Memory of:

Mr. J. J. M. van Zyl *by* Dr. E. G. van Hoogstraten.
Dr. M. T. Ascough *by* Kingwilliamstown Division.
Mrs. M. J. Searle by Dr. A. H. F. Cole.
Dr. N. Pencharz *by* Dr. A. J. Leonsins and Dr. L. J. Jacobson.
Dr. D. van der Merwe *by* Cape Midlands Branch.
Mrs. Dr. L. F. Biccard *by* Dr. F. D. du T. van Zyl.
Dr. N. W. Mesham *by* Drs. S. H. Cohen, S. A. Kalley, R. B. Peckham and A. H. Baxter.
Penny Trotter *by* Dr. and Mrs. Frank Walt.
Dr. E. W. Ingle *by* Dr. A. H. Baxter.

Total Amount Received from Votive Cards: ... £14 14 0

Services Rendered to:

Dr. Minnie Preiss *by* Drs. Fatti, Lichter and Roberts.
Dr. W. B. Fiddian-Green *by* Dr. Mungo Thompson.
Mrs. Verschuur, wife of Dr. M. S. Verschuur, and infant son *by* Drs. Raymond Theron, R. J. Tahan and P. M. S. Fischer.

Total Amount Received from Services Rendered: ... £29 8 0

Donations:

Dr. S. Donen	0 10 6
Dr. K. Bremer	0 10 0
Dr. L. M. Marchand	4 4 0
Members of Cape Western Branch (Collection Box)	5 15 8
	£55 2 11

REVIEWS OF BOOKS

CONTROLLED PARENTHOOD

Controlled Parenthood: By Reynold H. Boyd, M.B., Ch.B., F.R.C.S. (Pp. 67 with 17 Figures. Fifth Edition. 5s.). London: William Heinemann Medical Books Limited.

Contents: 1. Introduction. 2. Eugenic Reasons for Contraception. 3. Contraception and Venereal Diseases. 4. Contraception for Health Reasons. 5. Normal Span of Fertility. 6. Frigidity. 7. Continence. 8. Withdrawal and Holding Back. 9. Safe Period. 10. Sterilization. 11. Mechanical Occlusive Methods. 12. Chemical Methods. 13. Douching. 14. Condemned Method. 15. The Monthly Period. 16. First Month of Marriage. 17. After Childbirth. 18. Care of Rubber. 19. Contraception Sheet of Instruction. 20. Tests for Pregnancy. 21. Popular Fallacies. 22. Glossary. 23. Index.

This is a simple book written in clear language which will be useful and intelligible to those who are concerned with controlling the size of their families. On the whole, the positive information given is accurate, and the condemnation of certain contraceptive methods is certainly to be endorsed, e.g., the Gräfenberg ring and the wishbone pessary. There is also an adequate amount of information, anatomical and physiological, essential to a grasp of the requirements involved. It is, however, unfortunate that in the Summary on page 12 syphilis is mentioned as a 'serious hereditary disease,' particularly when it is quite clear from the text that the author is well aware of the difference between hereditary and congenital or acquired defects.

Although this volume is largely concerned with mechanical devices which society has employed for some 2,000 years or more, it would not be out of place to note the claims of the students of the human menstrual cycle who maintain that adequate control of conception is possible by a calendrical method such as that devised by Prof. A. C. Cilliers (the Minerva Calendar) based on the Ogino-Knaus theory of ovulation. This physiological technique is certainly one which must still be proved on an adequate scale statistically, but it may become a useful alternative or supplementary method to the mechanical devices described by the author.

This is, undoubtedly, a little book which the medical practitioner can read with profit and can also recommend safely to those who seek his advice.

EXPERTS ON NURSING

Expert Committee on Nursing, Second Report. World Health Organization Technical Report Series No. 49. (Pp. 20. 1s. 3d.) Geneva: World Health Organization.

Contents: 1. Health Needs of people and methods of meeting them. 2. How nursing can help to meet Health Needs. 3. Principles involved in Programmes for preparing nursing personnel. 4. Maximum contribution of nursing. Summary of recommendations.

The all-important contribution of nursing services in meeting health needs, and the problems involved in the provision of nursing personnel particularly in those areas in which they are scarce or not immediately available, are discussed in the second report of the WHO Expert Committee on Nursing, which is now available as No. 49 of the *World Health Organization: Technical Report Series.*

Food, shelter, clothing, a healthy environment, ability to use available resources, and provision of care for the sick, are recognized as universal prerequisites for healthy living. The nurse, an essential member of the health team, plays an important part in their attainment.

While the activities of a nurse vary greatly, she has four main functions to perform: (1) psychological and sociological —satisfying the emotional needs of patients, and stimulating community movements aimed at improving health; (2) operative —providing care for the sick, assisting in childbirth, the rehabilitation of patients, etc.; (3) educational—as health educator of all with whom she comes in contact, as well as teacher of voluntary workers, auxiliary personnel, and perhaps other nurses; (4) administrative and advisory—helping to devise teaching programmes, and to plan and organize health services. Nurses capable of fulfilling all aspects of their responsibilities are urgently required.

It is of paramount importance, when planning the provision of nursing services for the community, to take into consideration both short- and long-term needs, as well as the variation in types of services needed, and in the resources available to meet them, in regions of unequal development. Special care must be taken in the initial selection of nursing students in areas where the educational level of the people is

low; and although schools of nursing should provide training sufficiently comprehensive to fit the qualified student to fulfil all aspects of the nurse's role—and not merely the actual performance of nursing techniques—curricula must be adjusted according to the general stage of development of the students and the communities from which they have been drawn.

The maximum contribution from nursing personnel in the establishment and maintenance of healthy peoples will be ensured if they are trained in relation to the functions they are to perform, are placed strategically at all levels in the health services, are incorporated in the health team with the full understanding of their potential contribution, are fully aware of the goals and objectives of the team and of their own part in achieving them and, above all, if they bring to their task the human understanding which is the essence of their contribution.

MURDER ON THE HIGH SEAS

The Trial of Gustav Rau, Otto Monsson and Willem Smith—The Veronica *Trial.* Edited by G. W. Keeton, M.A., LL.D. and John Cameron, D.S.C., LL.D., Q.C. (Pp. 248, with 8 illustrations. 15s.) London; Edinburgh; Glasgow: Wm. Hodge & Company, Limited. 1952.

Contents: 1. First Day—Tuesday, 12th May, 1903. 2. Second Day—Wednesday, 13th May, 1903. 3. Third Day—Thursday, 14th May, 1903. Appendix I. Appendix II. Appendix III. Appendix IV. Appendix V. Appendix VI.

The Veronica Trial holds greater interest for the lawyer than the medical practitioner from the strictly technical standpoint. It unfolds a tale of murder, mutiny and arson on the high seas in the opening years of this century. What is interesting, from the psychological point of view, is the lack of motive revealed for the mass murders organized by a few ringleaders, and the powerful way in which they were able to impose their criminal will upon other weaker members of the crew. The personality of the accused was never an issue in the case, but for the modern medical reader the accused persons pose an interesting psychological problem.

The presentation of the case is extremely interesting, particularly when it is appreciated that one of the Counsel for the Crown was Mr. F. E. Smith (later Lord Birkenhead).

This *Trial* will provide interesting relaxation for the medical reader.

THE SCALP

The Scalp in Health and Disease. By H. T. Behrman, A.B., M.D. (Pp. 566, with 312 illustrations. £5 8s. 9d.) St. Louis: C. V. Mosby Company. 1952.

Contents: 1. Embryology, Anatomy, Physiology. 2. Normal Scalp, Hair Preparations, Dermatitis. 3. Alopecia. 4. The Seborrheic Diatheses. 5. Infections. 6. Scalp Disorders of Psychogenic Origin (Proved or Presumptive). 7. Scalp Involvement from Skin Diseases. 8. Scalp Involvement due to Systemic Diseases. 9. New Growths. Appendix.

This is an excellent publication. As Sulzberger so aptly describes it in his foreword, it is a veritable 'encyclopaedic work on the microcosm of the human hair.' The embryology, anatomy, anthropology and physiology of the hair are dealt with in considerable detail, a feature being lucidity of expression accompanied by numerous well-selected illustrations.

The present-day knowledge of the relationship of the various endocrine glands to the pilosebaceous system is well summarized but, as the author clearly indicates, considerable research in this complex field remains to be carried out before a full understanding of the interrelationships of the various factors and their influence on hair growth is attained.

There is an illuminating chapter on the care of the normal scalp, including practical instruction on the daily hygiene of the hair with the appropriate cosmetic applications, their composition, correct manner of use and the dangers associated with them.

Sabouraud's teaching (1902) is followed in the description of the pityriases and the condition is traced through the various stages of juvenile pityriasis capitis—the simple, dry, scaly condition—the effect of simple infection with the pityrosporon; the change at puberty to pityriasis steatoides—infection with *Staphylococcus albus* (the morococcus of Unna) and the acne bacillus producing acne vulgaris; and so to the fully evolved seborrhoeic dermatitis—infection with *Streptococcus pyogenes* and *Staphylococcus aureus*. The essential relationship between such diverse clinical features (and their dependence on the sexual evolution of the individual) is also discussed. The statement that in children pityriasis rosea is almost invariably located on the scalp and, further, that this is an almost constant characteristic of the disease, is not likely to be generally accepted.

Of considerable value is the extremely lengthy list of references at the conclusion of each chapter, the profuse illustrations throughout and a complete formulary in the Appendix.

This is a work which cannot be praised too highly and which should be in the possession not only of every dermatologist, but of every practitioner interested in the subject.

RORSCHACHIANA

Rorschachiana, International Review of Rorschach and Other Projective Techniques. Berne and Stuttgart: Hans Huber. Sole Distributors for the U.S.A.: Grune & Stratton, New York. Published Quarterly; 4 copies form one volume of at least 320 pages.

Contents: M. Bleuler, *After Thirty Years of Clinical Experience with the* Rorschach Test. M. Loosli-Usteri, *L'homme "normal" vu à travers le test de Rorschach.* D. Kadinsky, *Tiefen-psychologische Bedeutung der Erfassungstendenzen im Rorschach-Test.*

The First International Rorschach Congress voted to found an International Society for Rorschach and other projective methods and a journal corresponding to the Society's aims. The new *Rorschachiana* are intended to provide an international forum for research in personality, assisting in the exchange of facts and theories between serious investigators of all lands and schools. The foremost place is accorded in this journal to the Rorschach as being the oldest, best-studied and best-validated of all projective methods. The journal also wishes to assist, however, in subjecting the continually emerging new methods to thorough examination and criticism as well as in furthering such of them as prove, or already have proved, their worth.

NURSING AND PAEDIATRICS

A Textbook on the Nursing and Diseases of Sick Children for Nurses. By various authors, edited by Alan Moncrieff, M.D., F.R.C.P. (Pp. 770 + xiv, with 161 illustrations. 5th ed. 37s. 6d.) London: H. K. Lewis & Co. Ltd.

Contents: *Part I—General Considerations and Nursing. Section I.* 1. General Considerations. 2. The Normal Child. 3. The General Care of the Child. 4. The Sick Child. *Section II.* 5. General Nursing. *Section III*—General Surgical Nursing. 6. Bacteriology. 7. The Process of Inflammation. 8. General Principles of Surgical Technique. 9. Anaesthesia and Anaesthetics. 10. Pre-Operative and Post-Operative Nursing Care. 11. Haemorrhage and Shock. 12. Burns. 13. Nursing of Plastic Surgical Patients. 14. Tumours and Cysts. *Part II—Diseases of Children.* 15. Diseases of the Newly-born. 16. Dietetics in Childhood. 17. Breast Feeding. 18. Artificial Feeding. 19. Disorders of the Alimentary System. 20. Surgical Disorders of the Alimentary System. 21. Surgical Affections of the Head and Neck. 22. Disorders of Nutrition. 23. Tuberculosis, Syphilis and Rheumatism. 24. Orthopaedic Surgery, Part I. 25. Orthopaedic Surgery, Part II. 26. Orthopaedic Surgery, Part III. 27. Diseases of the Ductless Glands. 28. Diseases of the Circulatory System. 29. Diseases of the Nose, Throat and Ear. 30. Diseases of the Respiratory System. 31. Diseases of the Genito-Urinary System. 32. Diseases of the Nervous System. 33. Diseases of the Eye. 34. Diseases of the Skin. 35. Infectious Disorders. 36. Children in the Tropics. Appendix. Index.

Since its original appearance in 1930, this book has not only reached its 5th edition, but several of the earlier editions had to be reprinted very frequently. This fact alone must speak for the excellence of the work, and the very real need it supplies. But its meticulous and self-effacing editor has not been content to rest on his laurels. Aware of the almost alarming speed in the progress of medical science today, Dr. Alan Moncrieff has not only had each chapter of this latest edition revised, in the light of the newest developments in that particular subject, but he has added entirely new sections, doing away with others now obsolete, in order to give his readers the benefit of the highest possible authority in every branch and speciality of children's diseases.

The scope of this book is enormous, yet it contains no superfluous word. The authors, all on the staff of the Hospital for Sick Children, Great Ormond Street, have neither underrated the intelligence of the nurses for whom this book was written, nor have they overrated their professional requirements. All that a fully trained nurse needs to know is there for her. Nor is there any reason for her to blanch at the size of the volume. It is divided into 4 main portions (each a complete handbook in its own right) and then further subdivided, with so much understanding of its reader's needs, that any particular aspect of any particular subject is easily accessible without any frenzied searching.

Dr. Moncrieff is to be congratulated on having given us a book on the nursing and diseases of sick children which must, without doubt, be the best of its kind at present in the English language, and one that is indispensable to every nurse.

THE PREMATURE BABY

The Premature Baby. By V. Mary Crosse. (Pp. 181 + viii, with 18 illustrations. 16s.) London: J. & A. Churchill Ltd. 1952.

Contents: 1. Definition and Characteristics. 2. Management and Care. 3. Hospital Care. 4. Home Care. 5. Clothing. 6. Feeding. 7. Complications Liable to Occur in the Premature Baby. 8. Statistics in Relation to the Premature Baby. Appendix. Index.

Since the appearance of the first edition of this book in 1945, it has achieved a well-merited popularity and is without doubt the best-known English textbook on the subject. It describes the methods practised at the Premature Unit of the Sorrento Maternity Hospital, Birmingham. For many years, and largely through the efforts of Dr. Crosse herself, this unit has become established as an important training centre on the care of the premature. Particular emphasis is laid on managing without elaborate equipment and the methods described can be reproduced in any cottage hospital.

The third edition is authoritative and up-to-date and has been revised throughout. The chief alterations are on the chapter on complications, while sections on retro-lental fibroplasia, kernicterus and convulsions have been added and, as a result of more recent experience, feeding methods have been revised.

One may strongly recommend this book to students and all those who deal with problems of prematurity.

MURDER BY STRYCHNINE?

Trial of William Palmer. Edited by Eric R. Watson. Third Edition. (348 + xiv with 12 illustrations. 15s.) London: William Hodge and Company Limited.

Contents: Introduction. Table of Dates. 1. First Day—Wednesday 14 May 1856. 2. Second Day—Thursday 15 May 1856. 3. Third Day—Friday 16 May 1856. 4. Fourth Day—Saturday 17 May 1856. 5. Fifth Day—Monday 19 May 1856. 6. Sixth Day—Tuesday 20 May 1856. 7. Seventh Day—Wednesday 21 May 1856. 8. Eighth Day—Thursday 22 May 1856. 9. Ninth Day—Friday 23 May 1856. 10. Tenth Day—Saturday 24 May 1856. 11. Eleventh Day—Monday 26 May 1856. 12. Twelfth Day—Tuesday 27 May 1856. Appendices.

This is one of the classic cases of murder by poisoning. Palmer himself was a medical practitioner who did his training at St. Bartholomew's Hospital. Although he was suspected of having commited many more murders, other charges against him were not preferred because he was found guilty of the murder of Mr. Cook, a young gentleman of means rather than sense. Palmer appears to have been driven to murder in order to recoup his losses as a result of his extravagant behaviour on the race course, and the verbatim record clearly establishes the extraordinary looseness of Palmer's character in many other directions.

The bulk of the evidence, however, is medical, and provides one of the most interesting, if somewhat complex, clinical problems rendered still more difficult by the limited toxicological knowledge available at the time of the trial (1856). The examination and cross-examination of the medical witnesses become a most excellent guide to the medical reader about how to conduct himself in the witness box. The interesting issue of tetanus versus strychnine poisoning was explored very fully and many have been left with doubt whether Palmer did indeed murder his victim with strychnine. It is interesting that immediately before his execution Palmer re-iterated that he was 'innocent of poisoning Cook by strychnia'—an admission which carries many interesting implications.

South African readers will have a particular interest in this *Trial*, as it forces reminiscent comparison with the trial of Mrs. Daisy de Melker, who was alleged to have employed strychnine as well as arsenic. In her case also the alleged use of strychnine came in for severe attack, although the clinical symptoms were strongly suggestive of strychnine poisoning.

This is the third edition of *The Trial of William Palmer*, a murderer who clearly holds a very important place in the gallery of English poisoners.

RECENT ADVANCES IN MEDICINE

Recent Advances in Medicine. By G. E. Beaumont, M.A., D.M. (Oxon.), F.R.C.P., D.P.H. (Lond.) and E. C. Dodds, *M.V.O.*, D.Sc., Ph.D., M.D., F.R.C.P., F.R.I.C., F.R.S. (Edin.), F.R.S. (Pp. 397 + xv, with 59 illustrations. 13th ed. 27s. 6d.) London: J. & A. Churchill.

Contents: 1. Collagen Diseases. 2. Antibiotic Substances. 3. The Antihistamines. 4. The Use of Isotopes in Medicine. 5. The Vitamins. 6. The Liver. 7. The Stomach. 8. The Cardiovascular System. 9. The Lungs. 10. Antithyroid Substances. 11. The Nervous System. 12. The Haemopoietic System. 13. Biochemical Methods. Index.

This book was first published in 1924, and this thirteenth edition includes the advances since 1947. It achieves what the authors set out to do nearly 30 years ago, in that 'nothing of major importance has been omitted.' More than half the material is new.

The book is particularly valuable to those working for higher examinations in Medicine and Surgery and laboratory workers are catered for in that the new methods are given in detail.

The interplay of learning from the hospital wards and the laboratories is joined together firmly.

This book is recommended to all practitioners, and is available in English, Italian, Spanish and Rumanian texts.

CHRONIC BRONCHITIS

Chronic Bronchitis. By Trevor H. Howell, M.R.C.P. Ed. (Pp. 111 + viii. 22s.) Butterworth & Company (Africa) Limited, 1 Lincoln's Court, Masonic Grove, Durban. 1951.

Contents: 1. Introduction. 2. The Background of the Disease. 3. Morbid Anatomy. 4. Symptoms. 5. Physical Signs. 6. Varieties of Chronic Bronchitis. 7. Differential Diagnosis. 8. Clinical Pathology. 9. Pulmonary Complications of Chronic Bronchitis. 10. Cardiac Complications of Chronic Bronchitis. 11. Treatment I—Expectorant Drugs. 12. Treatment II—Antispasmodics. 13. Treatment III—Antibiotics. 14. Other Points in Treatment.

The author has obviously had a great deal of experience in dealing with patients suffering from those chest diseases due to heart failure and broncho-spasm.

He regards chronic bronchitis as a specific disease, which is quite contrary to the generally accepted view that it is a symptom of a variety of lung and heart conditions. Perhaps, for this reason, this small book will have but a limited appeal.

The etiology, symptoms, signs, diagnosis and treatment of this condition are summarized and, interestingly enough, the following classification is employed:—

1A: Acute Simple.
1B: Acute with bronchial spasm.
2A: Chronic Simple.
2B: Chronic with bronchial spasm.
2C: Chronic pyrexial.
2BC: Chronic with pyrexia and bronchial spasm.

The author then states that, if we agree that putrid bronchitis is, in reality, bronchiectasis, 2 types of the disease are left outside the scope of the above classification.

The manifestations of chronic bronchitis as seen mainly in elderly pensioners at the Royal Hospital, Chelsea, proves interesting reading, but cannot, veritably, be said to be of much practical advantage to those interested in diseases of the chest.

CORRESPONDENCE : KORRESPONDENSIE

SCOPE OF WORK OF MEDICAL AUXILIARIES

To the Editor: At a combined meeting of the South African Society of Physiotherapists and the South African Association of Occupational Therapists, held on 11 June, at the Johannesburg General Hospital, a resolution was moved by Miss Dyer of the South African Society of Physiotherapists: 'That employers should be advised that Medical Auxiliaries are not qualified to undertake work in any but their own fields. It is therefore unethical to ask them to do so, and unprofessional for them to accept.'

This resolution was seconded by Miss Barber of the South African Association of Occupational Therapists and carried by the meeting.

It was agreed that it be circulated to all Hospital Superintendents, and inserted in the *South African Medical Journal*, the *Physiotherapy Journal* and the *Occupational News Letter*.

L. Dyer.

South African Society of Physiotherapists,
(Central Executive Committee),
53 Pasteur Chambers,
Jeppe Street,
Johannesburg.
10 September 1952.

CANINE DISTEMPER AND MAN

To the Editor: I would be very grateful if I could be given any information with regard to the spread of canine distemper to humans—can this occur and, if so, what are the human manifestations? I would welcome references to the literature, if any. I am making this query as recently I treated three cases—all children, with irregular pyrexia and malaise of a few days duration only, whose dogs were being treated for distemper at the same time. Was this merely a coincidence?

M. Segal.

Mutual Bldg.,
Fourth Avenue,
Springs.
15 September 1952.

BLINDNESS IN THE BANTU

To the Editor: Your recent Editorial on *Blindness in the Bantu* cannot be allowed to pass without comment. In view of the publicity given in the lay press to the first half of the article, I feel that the more important second half should be stressed particularly.

Sorsby's figures for the blindness rate amongst South African Natives (351 per 100,000) are, as you suggest, on the conservative side. I have recently completed two eye surveys for the Bureau for the Prevention of Blindness of the South African National Council for the Blind. These were done in Sekukuniland, where trachoma or 'malnutrition pseudotrachoma' is very prevalent. The blindness rate for the whole of the Sekukuniland Native Reserve is known to be 800 per 100 000, but this again is a very conservative estimate.

In the Maandagshoek-Penge area, scene of the first survey, we found an incidence of 1,700 per 100 000, a figure 5 times greater than Sorby's estimate. The second survey was done with a colleague in the Oliphants' River scheme area of Sekukuniland. This area has been operating an irrigation scheme for Natives for the past 10 years. It provides a number of Native families with land under irrigation from the Loskop Dam. As a result of the relatively ample water for soil cultivation, this portion of the Reserve has been transformed from semi-desert to a garden of Eden, and is a marked contrast to the surrounding barren land on which other families have to eke out their existence. Crops are rich and plentiful, the cattle and sheep are fat and healthy, and controlled grazing by fencing has resulted in the retention of good veld. The Natives here have an adequate diet of protein and vitamins, including vitamins B and C. Having seen the conditions in this area, one cannot say that the 500 odd families living here are suffering from malnutrition, however true this may be of the adjacent areas.

Yet the incidence of trachoma or of malnutritional kerato-conjunctivitis, if the former is a 'misdiagnosis', was as high in the inhabitants of the scheme as it was in those who lived outside the scheme. The figures for children and young adults are in remarkable agreement inside the area and outside the area.

One could hardly call the predominant disease in the Oliphants' River Scheme malnutritional kerato-conjunctivitis, since malnutrition does not occur here. Trachoma it looked like and trachoma it was. This disease cannot be eradicated simply by improving the nutritional status of the people. The problem is much deeper than that and must be tackled more fundamentally. The public health authorities must be made aware that the disease we are dealing with is trachoma, an infectious disease caused by a virus, and spread by flies in conditions of bad hygiene. Graham Scott *et al.* demonstrated the inclusion bodies, thus agreeing with the disease as it is found in other parts of the world. The problem of the eradication of trachoma in this country entails education of the Natives in hygiene, provision of adequate water supplies for personal cleanliness as well as for the land and, above all, fly control, as well as improving the nutrition.

Trachoma is exceedingly rare in an urban Native population, such as the townships round Johannesburg, though malnutrition is common, as proved by the admission statistics of the Baragwanath Hospital. When I see a case of trachoma in an outpatients' clinic in Johannesburg, I always ask the patient where he comes from. The answer is almost invariably Rustenburg or Sekukuniland.

I hope to publish the figures of these interesting eye surveys in your *Journal* in the near future when the figures are finalized. Meanwhile, this letter (while the Editorial is still topical) may serve to swell the growing body of opinion which believes that trachoma is a very real and prevalent entity in this fair land of ours.

I. B. Taylor.

15 Ouimet St.,
Greenside Extension,
Johannesburg.
18 September 1952.

AFRIKAANSE BYDRAES TOT ONS TYDSKRIF

Aan die Redakteur: Graag sal ek deur middel van u ge-eerde blad die volgende informasie wil kry: Hoeveel van die lede van die Mediese Vereniging van Suid-Afrika, wat ook intekenare van u ge-eerde blad is, is Afrikaanssprekend en hoeveel is Engelssprekend?

My rede vir die vraag is omrede ek die uitgawe van u blad van 13 September 1952 'n bietjie nagegaan het. Daar was 37 bladsye waar daar net Engels op was; 5 bladsye waar daar albei tale was (insluitende die advertensie-bladsye) en nie een volle bladsy met 'n Afrikanse artikel nie; inteendeel die enigste Afrikaanse artikel was die redaksionele artikel.

Ek is geen rassehater of politieke heethoof nie, maar ek dink, as Afrikaanssprekende geneesheer, dat die verhouding eenvoudig skandelik is. Sal u Engelstalige intekenare so 'n toestand duld?

'n Redakteur wag nie bloot eenvoudig tot daar 'n Afrikaanse artikel opdaag nie, maar behoort bevoegde persone te nader vir artikels. Na alles, Afrikaans word mos darem erken deur die Mediese Vereniging van Suid-Afrika?

H. A. Grové.

Posbus 30,
Belfast,
Transvaal.
18 September 1952.

The Medical Association of South Africa : Die Mediese Vereniging van Suid-Afrika

AGENCY DEPARTMENT : AGENTSKAP-AFDELING

KAAPSTAD : CAPE TOWN

Posbus 643, Telefoon 2-6177: P.O. Box 643, Telephone 2-6177

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(1010) Cape Town. Nucleus of practice with excellent scope for expansion. Average annual receipts £1,100. Premium required, £850, which includes drugs, few instruments, half-share furniture. Consulting rooms shared with specialist.

(1016) Eastern Province. Unopposed solus practice. Average annual receipts £2,471. Premium for goodwill £1,000. Drugs, furniture and instruments offered at £190. Terms available. Attractive modern home to rent at £8 10s. p.m. Rental roomy surgery, £3 p.m.

(992) South-Eastern Cape hospital town. Premium required £1,500, which includes drugs, furniture and instruments worth approximately £1,350. Flat plus surgery to let at £6 p.m. Gross average annual cash takings, £2,500. Easy terms. Owner wishes to specialize.

(1101) Better class solus practice conducted from centre of growing industrial coastal city. Practice is expanding; reason for sale, vendor is specializing. Introduction will be given. Earnings £2,300, premium £1,750. Terms could be arranged.

(1099) Eastern Province. Well-established unopposed practice. Three good appointments. House to let at nominal rental. Gross cash takings for year ending December 1951 were £3,668. Premium required, £2,150. Terms available. Excellent opportunity for English-speaking doctor.

(746) Large dispensing practice, mainly non-European. Average annual cash receipts approx. £5,200. £5,500 required for premium, drugs and surgery furniture. Details on application.

(895) Partnership share in practice of Specialist Physician. Details on application.

(1115) Cape Town suburban practice. Details on application.

(1132) East Griqualand. Highly lucrative unopposed practice comprising rich European farming area bounded by large native territory. D.S. appointment. Beautifully built large 7 roomed house on 3 erven. New Diesel lighting plant fully automatic generating 230 Volts. £4,500 required for house, lighting plant and goodwill.

(1133) Noord-Kaapland. Dorp met verpleeginrigting en goeie skool. Uitstekende praktyk met drie aanstellings. Inkomste jaar eindigende Junie 1952, £2,500. Spreekkamers te huur. Premie van £1,250 vir klandisiewaarde sluit in geneesmiddels, spreekkamermeubels, ens.

ASSISTENTE/PLAASVERVANGERS VERLANG
ASSISTANTS/LOCUMS REQUIRED

(1123) Native Reserve. Assistant as soon as possible for 8 months. Own car not essential.

(1153) Griqualand East. 30 October to 29 November. Car will be provided. Non-European practice.

FOR SALE

(1079) HUMAN SERUM ALBUMEN imported from U.S.A., fully potent for further 18 months, held in refrigeration at Cape Town. Indicated for use in any condition in which the blood protein is reduced.
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PRAKTYKE TE KOOP: PRACTICES FOR SALE

(Pr/S34) Progressive Transvaal town dispensing practice. Average gross income £3,500 p.a. Excellent surgical facilities. Owner going overseas.

(Pr/S39) Pretoria practice. Gross annual income £3,200 to £3,500. Premium required £1,750. No house for sale. Full details on application.

(Pr/S51) Transvaal hospital town dispensing practice. Gross income over £6,000 per annum. It is essential that this practice be worked by two men, one to be a surgeon. Premium required £3,500, and terms could be arranged. Practice can only be sold if house and surgery are bought for cash. Details on application.

(Pr/S54) Established branch practice in Johannesburg. Annual income £1,000. Premium required £500. Very much scope for expansion.

(Pr/S55) Well-established practice in northern suburbs of Johannesburg. Will suit an English-speaking doctor. Premium required £1,000. Full details on application.

(Pr/S56) O.F.S. practice. Annual net income over £3,000. Premium required £2,000 and this includes X-ray machine worth £500 and some surgery furniture. £1,000 deposit and balance payable at £50 per month.

(Pr/S57) Small Johannesburg practice, with excellent scope for expansion. Full details on application.

(Pr/S58) Very well-established Johannesburg practice. Average annual income £5,500 to £6,000. Premium required £4,000 and terms will be arranged. Three months introduction will be given. Details on application.

(P/O10) Old-established firm in large centre in Rhodesia requires two gentile partners as soon as possible. Please apply for full details.

(P/O13) A Jewish partner is required for an excellent Eastern Transvaal dispensing practice. Must be a married man and over thirty years of age, and must have some surgical experience.

MEDICAL EQUIPMENT

(I/O45) Obstetric forceps. Prices range from £6 to £10. Blood pressure apparatus, as new. £7. Medical library, list of titles on application.

The Medical Association of South Africa : Die Mediese Vereniging van Suid-Afrika

AGENCY DEPARTMENT : AGENTSKAP-AFDELING

DURBAN

112 Medical Centre, Field Street. Telephone 24049

PRACTICES FOR SALE : PRAKTYKE TE KOOP

(PD10) General practice, Natal inland city. European and non-European patients. Scope for midwifery and surgery. Premium required £1,250, cash preferred, but terms will be considered. For immediate sale.

(PD13) Natal Lower South Coast practice, near Pondoland border, suitable for retired doctor. Area developing and large Police holiday camp in vicinity. Excellent climate and very good fishing. Premium required £400, includes good stock of drugs and dressings, instruments and dispensary furniture. House for sale £1,800, including stand of one-third morgen. Bond available. For immediate sale. Owner having taken a full-time appointment.

(PD14) Non-European dispensing practice in rapidly expanding industrial and residential area, 11 miles from centre of coastal City. At present no night or after hour calls, no week-end or surgical work undertaken. Practice could be improved if run on a full-time basis, otherwise ideal as a subsidiary practice. Turnover for twelve months ended 31 June 1952 averaged £170 per month. Total expenses including car and travelling expenses, £50 to £60 per month. Premium £750 including drugs, instruments and furniture.

LOCUM REQUIRED

(117) Natal Midlands. From 2 November to 2 December. 2½ guineas per day, free board and lodging. Free petrol and car allowance. Mixed general practice.

(114) Durban. From 12 December to 10 January, approximately. £2 12s. 6d. per day, lodging. Car and driver supplied, if necessary. Knowledge of Afrikaans desirable. General practice, R.M.O. appointment and non-European consulting room.

(106) Zululand. From 30 December to 30 January 1953. £2 12s. 6d. per day, car allowance. Single man or woman. Must possess own car. General country practice. Senior partner of the firm will be present throughout living 8 miles away.

(116) Near Durban. January 1953. £2 12s. 6d. per day, board, lodging. Own car desirable. Afrikaans essential. Mixed general practice, with R.M.O. appointment.

(118) Near Durban. From 3 January 1953 for 2 weeks. £3 per day, free board and lodging in the doctor's house. Car allowance of £2 per week. Afrikaans essential. Must possess own car. General practice, R.M.O. appointment.

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

Applications are invited from registered dentists for the post of honorary dentist at the Victoria Hospital, Wynberg.

The appointment will be for five years, but may be terminated before the end of that period if and when the staffing of the hospital is reorganized.

Applications containing particulars of age, qualifications, experience, etc. with copies of recent testimonials should be forwarded to the Medical Superintendent of the Victoria Hospital Wynberg not later than Thursday 30 October 1952.

V. Johnson
Acting Branch Representative

Hospitals Department
58, Loop Street
Cape Town 36331

Locum Wanted

Locum for district surgeoncy and private practice in Maltahoehe, South West Africa. Because of illness, wanted urgently and immediately for 8 to 10 months. Conditions: equal share for both of income after deduction of practice expenses. Write 'A. N. E.', P.O. Box 643, Cape Town.

Locum Required

Locum tenens required for Umtali, Southern Rhodesia, for the period 15 December 1952 to 31 January 1953. £2 12s. 6d. per day, board and lodging provided. Own car essential but petrol, oil and service provided. Allowance for travelling expenses. Write 'A. N. H.', P. O. Box 643, Cape Town.

Locum Assistent Gevra

Vir tydperk November en Desember 1952 of vir November of vir Desember. £2 10s. per dag, met vry losies en 9 pennies per myl distriksreistoelae. Skryf aan 'A. N. I.', Posbus 643, Kaapstad.

Wanted

Doctor desires to enter partnership in general practice. Knowledge of general surgery and 6 years hospital training in orthopaedic surgery. Write 'A. N. M.', P.O. Box 643, Cape Town.

Transvaal Provincial Administration

VACANCIES : TRANSVAAL PUBLIC HOSPITALS

Applications are invited from suitably qualified candidates for the undermentioned posts at Public Hospitals in the Transvaal.

Applications should be addressed to the Medical Superintendents of the undermentioned hospitals concerned and should contain full particulars as to the age, professional and academic and language qualifications, experience and conjugal status of the applicant and should further indicate the earliest date upon which duties can be assumed. Copies, only, of recent testimonials to be attached.

Cost-of-living allowance payable at present to full-time employees:—

	Cost-of-living Allowance	
Salary	*Married*	*Single*
Over £350 per annum	£320 per annum	£100 per annum

Full-time employees receive in addition to their salaries and cost-of-living allowance, the following privileges: Leave and rail concession.

Successful candidates will be required to submit satisfactory certificates as also to submit to a medical examination at the hospital concerned.

Application forms are obtainable from any Transvaal Provincial Hospital or the Provincial Secretary, Hospital Services Branch, P.O. Box 2060, Pretoria.

The closing date of applications for undermentioned posts will be 27 October 1952.

Hospital	*Post*	*Salary Scale*	*Remarks*
Krugersdorp	Clinical Assistant (Department of Gynaecology and Obstetrics) (1)	£620—780 —820—860	Registered medical practitioner. Must have considerable experience in general practice.
Vereeniging	Clinical Assistant (1)	£620—780 —820—860	Registered medical practitioner.
	Casualty Officer (1)	£620—780 —820—860	Registered medical practitioner.

37515

Assistantship Wanted

Assistantship wanted by recently qualified doctor as from 15 January 1953. Completed general housemanship and 6 months obstetrical experience in teaching hospital. Write 'A. N. J.', P.O. Box 643, Cape Town.

Natal Provincial Administration

VACANCIES: SENIOR MEDICAL OFFICERS

Applications are invited from registered medical practitioners for appointment to the following posts:—

Addington Hospital, Durban.
a. Medical Department.
b. General Duties.
c. Ear, Nose and Throat Department.
d. Surgical and Orthopaedic Department.

Wentworth Hospital, Durban.
a. General Duties.

King Edward VIII Hospital, Durban.
a. Casualty Department.
b. Anaesthetic Department.
c. General Duties.

Grey's Hospital, Pietermaritzburg.
a. Surgical.
b. Native Out-patients Department.
c. General Duties.

Appointment is on 12 months contract and the salary attaching to the posts is as follows:

Two years' service after qualification: £400 per annum plus privileges.

Three years' service after qualification: £600 per annum plus free quarters, or an allowance in lieu thereof.

Four years' service after qualification: £700 per annum plus free quarters, or an allowance in lieu thereof.

Five or more years' service after qualification: £800 per annum plus free quarters, or an allowance in lieu thereof.

In addition to the foregoing salary, a temporary cost-of-living allowance is also payable.

Applications giving full details of experience and qualifications, should reach the Director, Provincial Medical and Health Services, P.O. Box 20, Pietermaritzburg, by 29 October 1952. 7235

Public Service Commission

VACANCIES IN THE PUBLIC SERVICE

1. The attention of medical practitioners, registered with the South African Medical and Dental Council, is drawn to an advertisement appearing in the *Government* and *Provincial Gazettes* of this week, inviting applications for the undermentioned posts:—

Post	*Department/Administration*	*Salary Scale*
Medical Inspector of Schools	Cape Provincial Administration (Education Department	£950x50—1,300
Medical Officer	Health (Kimberley)	£900x50—1,150
Medical Officer (on contract for 2 years)	Health (Bloemhof, Durban (Gale Street and Newlands, Clairwood), Gcilima, Southbroom (Natal), Gordonia, Tongaat, Umtata, Bethlehem and Cradock).	900x50—1,150

2. In addition to salary a cost-of-living allowance at the rate of £320 per annum (married) and £100 per annum (single) is payable at present.

3. It is emphasized that full and detailed particulars of qualifications and previous experience must be furnished but original certificates and testimonials should not be submitted. Application forms Z.83 and P.S.C. 8(a) are obtainable from the Secretary, Public Service Commission, Pretoria, to whom filled-in forms must be addressed.

4. The closing date for the receipt of applications is 25 October 1952. 37222

Natalse Provinsiale Administrasie

VAKATURES: SENIOR MEDIESE BEAMPTES

Aansoeke om aanstelling in ondervermelde poste word van geregistreerde mediese praktisyns ingewag:—

Addington Hospitaal, Durban.
a. Mediese Afdeling.
b. Algemene Pligte.
c. Oor, Neus en Keelafdeling.
d. Chirurgiese en Ortopediese Afdeling.

Wentworth Hospitaal, Durban.
a. Algemene Pligte.

Koning Edward VIII-hospitaal, Durban.
a. Ongevalle Afdeling.
b. Narkose Afdeling.
c. Algemene Pligte.

Grey's Hospitaal, Pietermaritzburg.
a. Chirurgiese Afdeling.
b. Naturelle Buitepasiënte-afdeling.
c. Algemene Pligte.

Aanstelling is op 12 maande kontrak, en die salarisskaal verbonde aan die poste is as volg:

Twee jaar diens na afstudering: £400 per jaar plus voorregte.

Drie jaar diens na afstudering: £600 per jaar plus vry kwartiere, of 'n toelae in plaas daarvan.

Vier jaar diens na afstudering: £700 per jaar plus vry kwartiere, of 'n toelae in plaas daarvan.

Vyf jaar of meer diens na afstudering: £800 per jaar plus vry kwartiere, of 'n toelae in plaas daarvan.

'n Tydelike duurtetoeslag teen hersiende staatsdienstariewe is ook betaalbaar.

Aansoeke met volledige besonderhede betreffende ervaring en kwalifikasies moet aan die Direkteur van Provinsiale Mediese en Gesondheidsdienste, Posbus 20, Pietermaritzburg, gerig word, sodat hulle hom voor of op 29 Oktober 1952 bereik. 7235

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICE VACANCIES

1. Applications are invited for the undermentioned vacancies in the Hospital Board Service:—

Institution	*Post*	*Salary Scale*	*Closing Date*	*Application to be addressed to:*
Kimberley Hospital, Kimberley.	Medical Practitioner, Grade A (Pathological Laboratory)	£500–600–660–720 p.a.	1.11.52	The Medical Superintendent, Kimberley Hospital, Kimberley
Kimberley Hospital, Kimberley.	Medical Practitioner, Grade A (Resident Medical Officer)	£500–600–660–720 p.a.	1.11.52	The Medical Superintendent, Kimberley Hospital, Kimberley.

2. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, and the regulations framed thereunder.

3. In addition to the scale of salary indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees.

4. The successful candidates, if not already in the Hospital Board Service, will be required to submit satisfactory Birth and Health Certificates.

5. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

6. Candidates must state the earliest date on which they can assume duty. A.538332

Provincial Administration of the Cape of Good Hope/University of Cape Town: Joint Medical Staff

1. Applications are invited for appointment to a post of medical practitioner, Grade E (second assistant) in the Department of Medicine with salary at the rate of £1,600 per annum (fixed) on the Joint Medical Staff for the Groote Schuur Hospital and other teaching hospitals in the Cape Peninsula.

2. In addition to the salary indicated cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees. (Present rate—married persons £320 per annum and single persons £100 per annum).

3. The conditions of service are prescribed in terms of the Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

4. (a) The Joint Medical Staff will be required to serve jointly the Provincial Administration of the Cape of Good Hope and the University of Cape Town.

(b) A session shall be four hours per week not necessarily continuous, of clinical and/or teaching work.

5. (a) Candidates must state whether they wish to be considered for—

(i) appointment in a whole-time capacity; or
(ii) appointment in a part-time capacity; or
(iii) appointment either in a whole-time capacity or in a part-time capacity.

(b) Should they wish to be considered for appointment in a part-time capacity, the maximum number of sessions which they would on appointment be prepared to give indicating preference for days and times, should also be stated.

6. The successful candidates will be required to submit satisfactory birth and health certificates.

7. Applications must be made on the prescribed form Staff 23 which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board, in the Cape Province.

8. The completed application forms must be addressed to the Director of Hospital Services, P.O. Box 2060, Cape Town, and must reach him not later than 30 October 1952. Candidates must state the earliest date on which they can assume duty. A538333

Edblo Pension Fund: Physician Required

Applications are invited from registered specialist physicians for the position of medical adviser to the above Fund. Remuneration will be at the rate of £21 per annum and £2 2s. for each patient examined. The successful candidate will also be required to check and scrutinize medical reports. Applications should reach the Secretary, Edblo and Main Tin Manufacturers Limited, P.O. Box 6488, Johannesburg, by 25 October 1952.

Te koop

O.V.S. praktyk. Medisyne word aangemaak. Inkomste £2,400 per jaar. Goeie kanse vir uitbreiding. Premie vir kliendisiewaarde, medisyne voorraad en spreekkamermeubels, £1,000. Terme kan gereël word. Skryf aan 'A.N.G.', Posbus 643, Kaapstad.

Vennootskap Verlang

In Bolandsehospitaaldorp, deur geneesheer 6 jaar gekwalifiseerd, met breë algemene ondervinding, insluitende chirurgie. Skryf aan 'A. N. K.', Posbus 643, Kaapstad.

Provinsiale Administrasie van die Kaap die Goeie Hoop/Universiteit van Kaapstad: Gesamentlike Mediese Personeel

1. Aansoeke word ingewag vir aanstelling tot die pos van geneesheer, Graad E (tweede assistent) in die Departement van Medisyne met salaris teen £1,600 per jaar (vasgestel) op die Gesamentlike Mediese Personeel by die Groote Schuur Hospitaal en ander opleidingshospitale in die Skiereiland.

2. Benewens die salarisskaal soos aangedui, is 'n lewenskostetoelae teen tariewe wat van tyd tot tyd deur die Administrateur vasgestel word, betaalbaar aan voltydse beamptes en werknemers. (Teenswoordige tarief—getroude persone £320 per jaar en enkel persone £100 per jaar).

3. Die diensvoorwaardes word voorgeskryf ingevolge die Ordonnansie op Hospitaalraadsdiens nr. 19 van 1941, soos gewysig, en die regulasies wat daarkragtens opgestel is.

4. (a) Van die Gesamentlike Mediese Personeel sal vereis word om die Provinsiale Administrasie van die Kaap die Goeie Hoop en die Universiteit van Kaapstad gesamentlik te dien.

(b) 'n Sessie is vier uur per week in verband met kliniese en/of opleidingswerk maar is nie noodwendig onafgebroke nie.

5. (a) Kandidate moet meld of hulle in aanmerking geneem wil word vir—

(i) aanstelling in 'n voltydse hoedanigheid; of
(ii) aanstelling in 'n deeltydse hoedanigheid; of
(iii) aanstelling òf in 'n voltydse òf in 'n deeltydse hoedanigheid.

(b) As hulle in aanmerking geneem wil word vir aanstelling in 'n deeltydse hoedanigheid, die maksimum getal sessies wat hulle by aanstelling gewillig sal wees om by te woon, asook die dae en tye wat hulle verkies.

6. Die suksesvolle kandidate moet bevredigende geboorte- en gesondheidsertifikate indien.

7. Aansoek moet gedoen word op die voorgeskrewe vorm Staf 23 wat verkrygbaar is by die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad, of by die Mediese Superintendent van enige Provinsiale Hospitaal of die Sekretaris van enige Skoolraad in die Kaapprovinsie.

8. Die voltooide aansoekvorms moet gerig word aan die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad, en moet hom nie later as 30 Oktober 1952 bereik nie. Kandidate moet die vroegste datum meld waarop hulle diens kan aanvaar. A538333

Basutoland Government

VACANCY FOR MEDICAL OFFICER

Applications are invited from registered medical practitioners for the above post, on a salary scale of £865—£865—£935 × 35—£1,005 × 45—£1,140 × 45—£1,320 per annum. In determining an officer's point of entry into this scale credit may be given for war service and previous experience. Cost-of-living allowance is payable and at present the rates are as follows:

Married rates: On the first £800 of salary 12½%; on the remaining salary 7½% with a maximum of £132 per annum.

Single rates: One half of the above rates subject to a maximum of £66 per annum.

These rates are subject to alteration from time to time. Furnished quarters are provided by Government for which there is a rental deduction from salary of 10%. Annual vacation (cumulative) leave of six weeks and two weeks occasional (non-cumulative) leave are granted subject to the exigencies of the service. The post is pensionable after a probationary period of two years.

For further particulars and application form apply to the Director of Medical Services, Maseru, Basutoland. 536

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